American Fruit Grower Magazine for May

Volume XLIX MAY, 1929 Number 5

IN THIS issue we inaugurate a new service to our readers in the form of a series of articles on the preparation of fruits and vegetables for market. The department is and will continue to be edited by W. H. Hall, whom we take pleasure in introducing to our readers. For the past ten years Mr. Hall has been in charge of the Market News Service on Fruits and Vegetables of the United States Department of Agriculture at the South Water Market, Chicago, and is particularly well equipped to advise fruit and vegetable growers on matters pertaining to packing and shipping their products. Being located where he is able to see the fruits and vegetables arrive from the different sections of the country, Mr. Hall is in a position to give growers first hand information as to the condition in which these products are received.

The "South Water Market" of Chicago

The initial article, "Use Care in Handling Strawberries," on page nine of this issue, will be read with interest by every grower and shipper of strawberries. South Water Market is the great American market. Fruits and vegetables from every state in the Union are shipped to it, to be absorbed into the requirements of the Metropolitan district at the foot of Lake Michigan, or to be reshipped to the smaller markets of the nation. The methods of grading, packing and shipping that are requisite for higher profits on the South Water Market are the same that prevail throughout the Central states.

In connection with this new service we invite our readers to write to us in regard to their marketing problems, especially on small fruits and vegetables. We have in the past been able to place many of our readers in touch with satisfactory market outlets, and will be glad to offer our services to others, without charge, in finding a marketing outlet.

ONE PROPOSED piece of legislation, now before Congress for consideration, stands out in sharp relief in point of real worth, to the multitude of unsound and fantastic measures that have been proposed to "relieve" the commercial fruit grower. The Summers Bill (H. R. 2), has been carefully framed "To suppress unfair and fraudulent practices in the marketing of perishable agricultural commodities in interstate and foreign commerce." The bill provides that "no person shall at any time carry on the business of commission merchant, dealer or broker without a license valid and effective at such time," and sets forth the conditions under which such licenses may be granted, and, more important still, when and under what conditions such licenses may be revoked.

Write a Letter to Chairman Haugen

Briefly, the intent of the bill is to protect the grower and shipper of fresh fruits and vegetables from loss at the hands of the dishonest receiver by holding the latter strictly to account for the handling of fruits or vegetables, and fining him and revoking his license if he plays crooked. The bill has teeth.

It is now before the House Agricultural Committee, and is apparently being held up by one man, Gilbert N. Haugen, Chairman of the Committee. Mr. Haugen, so report has it, is anxious to extend the scope of the bill to cover grains and general farm crops, and is delaying action on the bill. A pointed letter to Chairman Haugen, stating your belief that the bill should pass as it stands will be a letter written in your own interest.

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"GOING TO TOWN"

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Now you hop into the car, swing out on the state highway, and speed smoothly to town at forty miles an hour. The store you enter is modern, clean. Buying is a simple matter. You ask for this brand of breakfast food or flour—that kind of shoes or flashlight. Packages and brand names are your guide. You know that you're getting the best products for the least money.

Advertising has simplified the whole process. It has told you the merits of the car you drive, helped you to have good roads to run it over. It has brought you the machinery that lightens farm labor and gives you leisure to get away more often. It has explained the fertilizers that mean more money for your crops and the spray and dust machinery and materials that protect them . . . In every way it is **continuing** to make your life more comfortable and pleasant.

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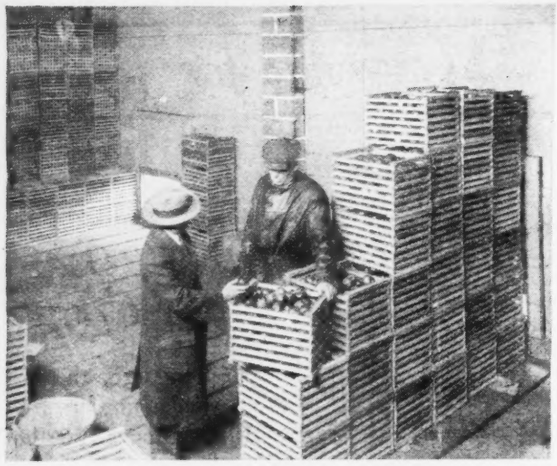

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OVER TWO and a HALF MILLION TONS of GRAPES

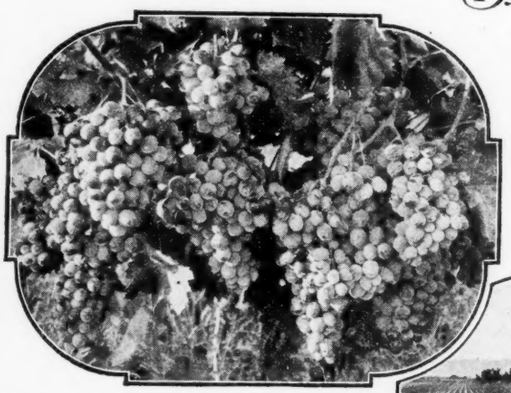
An Outline of the Grape Growing Industry in America, With the History of the More Important Commercial Varieties and Their Distribution Through the Grape Districts of the United States.

By HORATIO STOLL

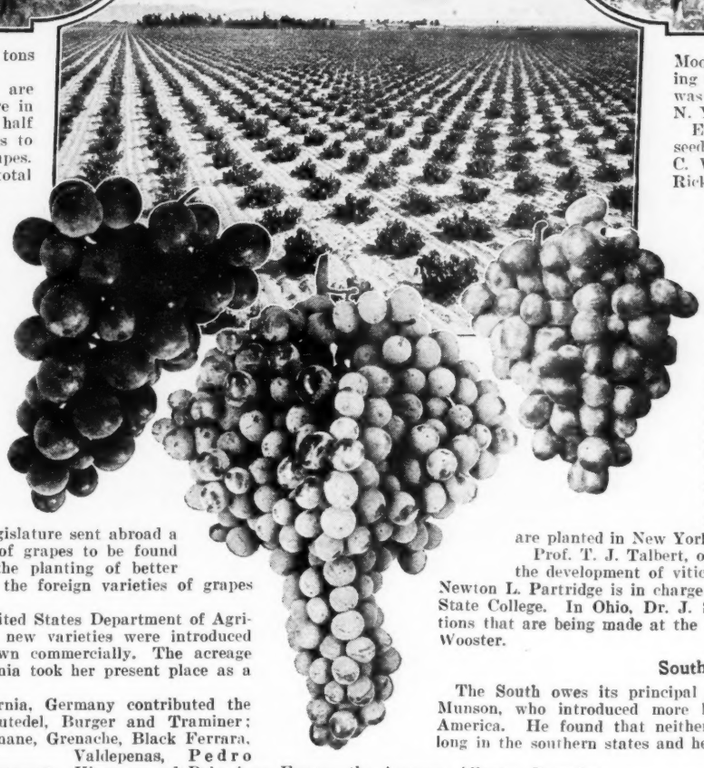
Editor, CALIFORNIA GRAPE GROWER

IT IS DOUBTFUL if any country in the world is treated to a wider range of commercial grapes than the United States. California supplies the European types; New York, Michigan, Pennsylvania, Arkansas and Missouri the bulk of the American or eastern types; and Florida, Texas and Georgia are beginning to grow commercially the Munson hybrids and adaptations that thrive in the South Atlantic and Gulf states.

One of the surprises to people who live outside the state of California is the magnitude of her viticultural industry. Last year there was produced in the whole United States 2,636,076 tons of grapes. All but about 300,000 tons were harvested in the Golden State.



Left. The popular Flame Tokay. Right. The Ribier. Below: Left, The Concord, planted more than any other variety in the eastern and central western states. Center. The Persian Khalili, usually the first variety shipped from California. Right. The Argentine Almeria. Center panel. A five thousand acre vineyard in what was formerly the Cucamonga desert in southern California.



According to recent estimates, there are nearly 700,000 acres devoted to viticulture in California. Of this acreage, more than half is planted to raisin grapes, 170,000 acres to juice grapes and 150,000 acres to table grapes. There are over 20,000 vineyards, and the total investment in the grape growing industry, including vineyards, establishments for the manufacture of by-products, shipping sheds, warehouses, etc., is estimated at $250,000,000, from which a gross income of $50,000,000 is derived annually.

The grape industry of California is really only about 75 years old, although the Franciscan Fathers planted the grapevine shortly after their arrival in San Diego in 1760. The padres cultivated the vines carefully and gathered the purple berries which came to be known as the "Mission" variety.

Little advance was made towards increasing the area of viticulture until 1859, when through the publication of vine articles a widespread interest manifested itself in vine planting. The bulk of the acreage was devoted to the Mission variety.

In the early sixties, California's state legislature sent abroad a commission to secure the finest varieties of grapes to be found in Europe and Asia. This resulted in the planting of better varieties, but it was not until 1880 that the foreign varieties of grapes were set out extensively.

Through the persistent efforts of the United States Department of Agriculture and the University of California, new varieties were introduced and won popularity when they were grown commercially. The acreage increased by leaps and bounds and California took her present place as a producer of fine grapes.

Of the varieties now grown in California, Germany contributed the Black Hamburg, Blue Elbe, Riesling, Gutedel, Burger and Traminer; Spain, the Mataro, Malaga, Ohanez, Carignane, Grenache, Black Ferrara, Valdepenas, Pedro Ximenes and Palomino; France, the Aramon, Alicante Bouschet, Grand Noir, Malvoisie, Petit Bouschet, Saint Macaire, Cabernet, Petite Sirah, Olivette Blanche, Gros Guillaume and Prune de Cazoul; Italy, the Barbera and Grignolino; Persia, the Rish Baba, Dizmar, Khalili and Monukka; Asia Minor, the Dattier de Beyrouth, Rosaki, Hunisa and Sultanina; Greece, the Zante Currant and Piment; Southern Russia, the Zabalkanski; Africa, the Muscat of Alexandria and the Flame Tokay.

Eastern Grapes

The early immigrants to America tried to introduce the vines of the motherland in the eastern states but the cold winters made their efforts futile. Success came only when horticulturists devoted their experiments to improving the wild native varieties.

The popular black Concord, which today produces 90 per cent of the tonnage in the Chautauqua and Finger Lakes area of New York, the Benton Harbor and Paw Paw districts of southern Michigan, in Erie county, Pennsylvania, and the Ozark districts in Missouri and Arkansas, was originated by Dr. Ephraim Bull, of Concord, Mass., from seeds saved from some wild grapes.

The red Catawba was found in the woods near Catawba River in North Carolina in 1801 by a Mr. Murray. The purple Isabella was discovered as a chance seedling in the vicinity of Dorchester, S. C., before 1816. The Delaware was found in the garden of Paul H. Prevost, a Swiss vineyardist of Frenchtown, N. J., about 1855. The black Ives was originated by Henry Ives, of Cincinnati, about 1844. Moore's Early was created by J. B. Moore, of Concord, Mass., in 1872 and during the same year, the yellowish-green Niagara was produced by Lyon and Hoag, of Lockport, N. Y.

Edward S. Rogers of Ohio originated 45 seedlings, known as Rogers' hybrids: Dr. C. W. Grant originated the Iona: James H. Ricketts, of Newburg, N. Y., produced the red Jefferson: Jacob Rommel, of Morrison, Mo., produced the amber Elvira and the black Montefiore: and S. Worden, of Minetto, N. Y., originated the Worden early in the eighties.

To-day, Prof. F. E. Gladwin is generally recognized as the leading authority in the United States on the culture of the American type grape. Since 1909, he has been associated with the New York State Experiment Station at the vineyard laboratory at Fredonia, N. Y. With Prof. F. Z. Hartzell he has helped to develop new American type varieties. Dr. U. P. Hedrick has produced some splendid new hybrids at the experiment station at Geneva, N. Y. Ten new sorts recently introduced are Brocton, Sheridan, Urbana, Wayne, Keuka, Dunkirk, Fredonia, Portland, Pontiac and Ripley, all of which are planted in New York vineyards.

Prof. T. J. Talbert, of the University of Missouri, is directing the development of viticulture in that state. In Michigan, Prof. Newton L. Partridge is in charge of the viticultural work of the Michigan State College. In Ohio, Dr. J. S. Shoemaker heads the grape investigations that are being made at the Ohio Agricultural Experiment Station at Wooster.

Southern Grapes

The South owes its principal grape varieties to the late Prof. T. V. Munson, who introduced more hybrids than any other viticulturist in America. He found that neither the European nor eastern types lived long in the southern states and he proceeded to develop a (*To Page* 21)

Left. The extent to which unprofitable varieties are being removed in California may be judged from the fact that special tractor diggers are used for the purpose, which cut to a depth of two feet under the vines, severing all but the smallest roots. Right. Prof. Fred E. Gladwin of the New York Experiment Station is generally recognized as the foremost authority on the culture of the American type grape.

XUM

CANE FRUITS BRING QUICK CASH to NORTHWEST Growers

By HENRY HARTMAN
Oregon Agricultural College

While Cane Fruits Are Grown in the Northwest on a Wide Variety of Soils, Satisfactory Yields and Quality, with Consequent Profits, Are Secured from Plantings on Limited Types of Suitable Soils.

THE CANE FRUIT industry is one of the major branches of horticulture in the Pacific Northwest. Approximately 20,000 acres are devoted to the production of cane fruits in the states of Oregon and Washington. The annual production of loganberries, raspberries and blackberries in the state of Oregon alone is in excess of 30,000 tons.

Although cane fruits can be grown in many parts of the Northwest, the commercial industry is confined largely to the cool, humid region west of the Cascade Mountains, particularly in the Willamette Valley of Oregon, the Puyallup Valley of Washington and parts of British Columbia.

Cuthbert is practically the only variety of red raspberry that has stood the test of years. While only a moderate producer, this sort is especially desirable for canning and fresh fruit purposes. Marlboro, King and Antwerp are grown in a limited way in the Puyallup Valley. Black raspberries have not met with general favor, although such varieties as Munger and Plum Farmer are produced in a few localities. Loganberry is the only sort of its class that has gained recognition. Primus and Phenomenal have not been able to compete with it. Evergreen seems to be the only blackberry that meets with the approval of both the growers and the trade. Mammoth and Corey Thornless, while excellent for home use, have not proved desirable for commercial planting. Dewberries and purple-cane raspberries are well adapted to this region, but, up to the present time, the trade has taken but little interest in them.

Soils for Cane Fruits

Success with cane fruits depends in a large measure upon proper soil selection. It is true that these fruits are being grown on a wide variety of soils, but satisfactory yields and quality are limited to rather definite soil types. The typical "raspberry soil" of Puyallup and Gresham, for example, is a deep, well drained, sandy loam, while the slightly rolling river bottom soils are ideal for loganberries. Cane fruits never do well on tight, poorly drained, clay loams. Red hill land which has proved to be well adapted to many of the tree fruits is not generally satisfactory for cane fruits.

A little care in the selection of sites for cane fruit plantings will do much to increase yield and improve quality. Cane fruits are naturally sensitive to the dry heat of summer. Cool situations, therefore, should be selected whenever possible.

Establishing the Plantation

Planting distances and planting systems are influenced more or less by such factors as distribution of sunlight, strength of soil, vigor of the varieties grown, training system to be used and cultural practices to be followed. Loganberry plants do well and can be handled to advantage when set on the square plan, eight to 10 feet apart, nine feet apart being a popular distance on average soil. Evergreen blackberry can be handled nicely when set in rows seven to eight feet apart, with the individual plants 14 to 16 feet apart in the rows. Cuthbert red raspberry is now generally planted by the linear method, the rows being from six to eight feet apart, and the plants from two to three feet apart in the rows. The hill system does not lend itself to the cultural practices employed with red raspberries in this region. Black raspberries are also set according to the linear system with the rows seven to nine feet apart and the plants about four feet apart in the rows.

Tillage in cane fruit plantings is practiced with the aim of conserving soil moisture and of making the soil foods available in greater quantity.

Cane fruits as a class are shallow rooted, with the result that at the beginning of each growing season, feeding roots are established in the upper layers of soil. Shallow cultivation, therefore, should be practiced during the spring and summer months. Plowing, disking and deep cultivation of any sort should be confined to the dormant season. There is a feeling at the present time that too frequent tillage in summer may cause injury to cane fruits. At any rate, a program of tillage that successfully keeps down weeds and that maintains a shallow dust mulch should be adequate.

The paramount problem of the cane fruit grower so far as soil fertility is concerned is the finding of an economical method of replacing and maintaining the supply of organic matter. Organic matter returns to the soil the same elements that are removed by crops, improves the physical properties, promotes necessary bacterial action and increases water holding capacity. Commercial fertilizers undoubtedly have a place in the soil management program, but they cannot completely replace organic matter.

Soil lacking in organic matter is usually characterized by light color, stickiness when wet and compactness when dry. Cane fruit plants on such soil are marked by lack of good green color, by spindling growth, and by fruit that is small and seedy.

Two general methods are employed in replenishing organic matter—(1) the use of cover crops and (2) the application of manure, straw or other forms of crop refuse.

Owing to the comparatively mild winters of this region such cover crops as barley and common vetch (V. sativa) can be made to produce a considerable amount of organic matter during the winter months. Vetch, being a leguminous plant, has the power to make free nitrogen from the air available for plant use.

Crop refuse of any kind should not be permitted to go to waste if it is within hauling distance of cane fruit plantings. Manure and straw may be used in liberal quantities, 10 to 20 tons per acre not being excessive amounts.

Commercial fertilizers have been used with success by many cane fruit growers. This is especially true of the nitrogen-bearing fertilizers. Authorities are not fully agreed as to the role that potash, phosphorus and sulphur should play in the soil program for cane fruits in the Pacific Northwest.

Irrigation

Thus far, irrigation has not become a standard practice in this region. There is but little doubt, however, that cane fruits are benefited by irrigation especially during dry seasons. Recent experiments have fully demonstrated this fact. To permit the ripening of the canes for winter, late irrigation should be avoided. Each irrigation should be followed by tillage in order that the moisture may be conserved.

Pruning and Training

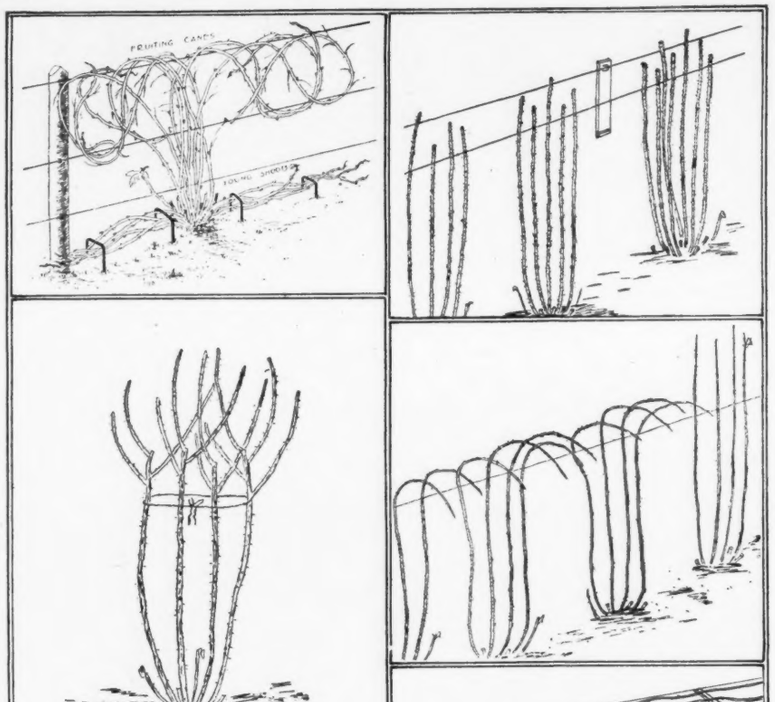
Though commonly discussed under the same heading, pruning and training are distinct operations. Pruning deals with the removal of portions of the vine, while training has to do with the disposal of the vine upon the trellis or support.

Many systems of pruning and training are employed in commercial cane fruit plantings and growers are not in accord as to the merits and demerits of each.

The Loganberry. Ordinarily, very little pruning is necessary in the case of the loganberry. If the canes are vigorous and healthy, they may be trained at full height. Frequently canes are produced which are not long enough to be attached to the trellis. All such canes should be removed. Old canes should be taken away as soon as the crop has been harvested. This practice gives the new shoots more air and sunlight and keeps down insects and diseases.

Loganberry canes are usually disposed of on the trellis by either the rope system or the weave system. When trained by the rope system, the canes are bound together in bundles and then wrapped around the wires. When the weave system is used, each cane is woven on the wires separately (Fig. 1).

Red Raspberries. Since the hedge row system of planting is commonly used in red raspberry plantings, most of the sucker growth is removed (*To Page* 14)



(Pictures courtesy ORE. EXP. STA.)

PRUNING AND TRAINING METHODS THAT INCREASE PRODUCTION

Fig. 1. Upper left. The weave system of training the loganberry affords a good distribution of the fruiting area and at the same time is convenient for the pickers and tillage implements.

Fig. 2. Upper right. The fruiting area of red raspberry vines may be lowered by topping the canes from four to four and one-half feet from the ground. The wires afford protection for the young shoots and at the same time keep the fruiting canes within bounds. Note the position of the spreader when not in use.

Fig. 3. Right center. The fruiting area of red raspberries may also be lowered by the use of the weave system. The double weave, in which half of the canes are woven on each wire with a space in the center for the young shoots to come up through, is now very popular in plantations wherein a heavy cane growth is obtained.

Fig. 4. Left center. A convenient and inexpensive method of training the black raspberry.

Fig. 5. Lower left. The two-wire trellis for the Evergreen blackberry is used by some growers.

Fig. 6. Lower right. The overhead system of training the Evergreen blackberry not only affords protection for the young shoots, but permits them to grow in the sunlight where they may mature properly for winter.

DIVIDENDS from the YOUNG ORCHARD

Companion Crops Can Profitably Be Grown in the Young Orchard If a Few Simple Rules Are Observed That Will Guard Against Sacrificing the Ultimate Value of the Orchard. Some Annual Crops That Are Peculiarly Well Adapted for Orchard Intercrops.

By J. J. TALBERT

University of Missouri

TO EVERYONE who plans an orchard this question arises, "How can I make the land pay while the trees are coming into bearing?" This is true whether it be a home orchard or a commercial orchard. The question is really of vital importance. Were it given greater consideration by most planters, there would be fewer orchards neglected and abandoned before they come into bearing. The farmer who grows other crops and keeps some live stock and poultry has an advantage over the producer who pins his faith entirely to one crop. This is true because many good intercrops for which there is no market at harvest time may be profitably fed to live stock and poultry. Such diversification should maintain the producer while the orchard is coming into bearing. Even after bearing, the production of dairy, poultry and a few other products as minor projects to the orchard may prove profitable in the maintenance of the fruit grower during lean fruit years as well as good ones.

Left. Cabbage is one of the best crops for intercropping, and, properly handled, does no harm to the trees. Right. Growing head lettuce in a young orchard. Center. A one-year-old peach orchard interplanted with sweet potatoes and showing good culture.

Much study and investigation has shown that, as a rule, increased fruit production per acre and the growing of several crops instead of one is generally most profitable. This applies as forcefully to orchards as to the growing of any other kind of crop. The point which the fruit grower should always keep in mind in this connection is that he must give his fruit crops his major interest; otherwise, he is likely to fail.

Requirements of an Intercrop

While there is perhaps no ideal inter or companion crop, yet some crops come more nearly meeting ideal requirements than other crops. A thorough understanding, therefore, of the requirements to look for in an intercrop is very important.

1. *The Crop Must Be Profitable.*—It should be suited for feeding to live stock or for sale on the market for cash. This is a vital question if the land is to pay before the trees come into bearing. A consideration of both local and district markets may solve the problem of selling the crop for cash, while a study of the matter of feeding the crop to live stock may give a solution to the question of making the growing of intercrops profitable.

2. *The Crop Must Be Cultivated.*—To keep the young trees vigorous and less susceptible to the attacks of both diseases and insects, cultivation is required. In fact, cultivation is decidedly the most important single practice which can be performed while the trees are young. It is most fundamental in the production of a profitable orchard. Coupled with cultivation, of course, should go proper pruning, spraying, and fertilization. It may be that the intercrop will require fertilization, in which case the trees may be able to procure their portion of such fertilizer.

Strawberries are profitable for intercropping.

3. *Crop Should Not Require Late Summer Cultivation.*—Stirring the soil, particularly in August or early September, may induce, especially during certain seasons, a spurt of late vegetative growth. Such late growth may not have time to mature and ripen properly to withstand low temperatures during winter. As a result, trees which have been induced to make a late summer or early fall growth may suffer severely from winter injury.

4. *Crop Should Not Exact Same Food Elements as Trees.*—The intercrop should be one which does not require precisely the same food elements as the trees themselves require. A crop requiring comparable food elements would be nursery stock of the various kinds. By judicious fertilization, however, this objection could be overcome at least to a great extent.

5. *An Annual Crop Is Better.*—Annual crops give an opportunity for more thorough cultivation of the entire space between and around the trees. The operation of machinery drawn by horse power or otherwise is made easier. With the growing of perennial crops between the rows much more hand labor, which increases the expense, is required.

Space Reserved for Trees

In the planting of intercrops, a certain portion of land should always be reserved for the trees. This should be not less than a strip from eight to 10 feet wide along each row of trees. It is always important that this space be widened with each year's growth of the trees, in order to allow sufficient room for the unobstructed growth of the tree roots. Of course, it goes without saying that with the growth of any intercrop, the space reserved for the tree row should be given thorough and timely cultivation at the same time cultivation is being given the intercrop.

As stated above, annual crops are generally considered better as intercrops for the orchard than biennial or perennial crops. This is true because annual crops occupy the land only one year: they may be cleared away in the fall or spring, thus ridding the plantation of serious diseases and insects; and they allow for thorough cultivation of the entire space between the trees. Consequently, all cultural operations may be performed with less difficulty and at less expense.

Beans and Peas.—In general, all varieties of beans and peas are satisfactory as orchard intercrops. The kinds suitable for cash crops or for use in feeding live stock or poultry may be particularly desirable. Little, if any, objection can be raised against these crops when grown in the orchard. They may also be planted late enough to act as a cover crop, and at the same time take food materials and moisture from the soil, causing the trees to slow up growth and make ready for winter conditions. Such crops may, therefore, store nitrogen for the trees, harden them for winter, and give a return in seed and forage.

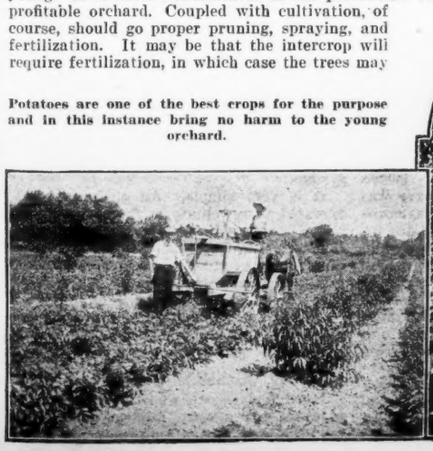
Tomatoes.—Fairly early tomatoes may be grown as a cash crop between the trees. The crop takes soil food and moisture at a time when the trees should be made to slow up growth. There are few crops that are better suited to intercropping, all factors considered. In many sections there are tomato canning factories where the harvest may be disposed of at satisfactory prices, bringing a cash return.

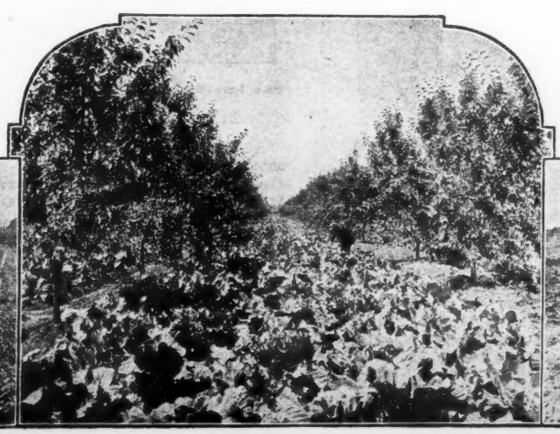
Early Cabbage.—This is another crop which fits into the orchard intercropping scheme in a very satisfactory way. The cabbage plants take food nutrients and moisture when they both should be readily available to the trees and the cabbage plants.

Sweet Potatoes.—Sweet po- (*To Page* 21)

Good market returns are in sight from this intercrop of cauliflower.

Potatoes are one of the best crops for the purpose and in this instance bring no harm to the young orchard.





Soy beans as a companion crop in a young pear orchard prove admirably adapted to the purpose, and make a profitable crop.

SUMMER CONVENIENCES for the FRUIT FARM HOME

Modern Equipment Is Responsible for Lifting the Farm Housework from the Plane of Drudgery to That of a Pleasurable Occupation. True Economy Is to Be Found in Time and Labor-Saving Conveniences.

THE ADVANCEMENT of any class of people may be judged by the extent to which they make use of electricity for the lightening of labor in the home as well as in work. In this respect, the farmers of America until recent years have lagged behind their city brethern.

The rapid extension of power electric lines into the more thickly settled rural communities is having the effect of raising the standard of comfort in rural homes. And where current from power lines is not available, electricity may be secured almost as cheaply from the farm electric plant.

Although it is a piece of farm equipment that is not placed in the kitchen, the individual electric plant plays a large part in kitchen efficiency and comfort. Electricity from the individual plant provides safe, brilliant light for kitchen work. It makes possible running water under pressure at the sink, and saves countless footsteps outdoors to a pump, water, while many, many more thousands have yet to do so.

As water is a fundamental necessity of life and health, provision should be made on every American farm to have an abundant supply of it, and now that the problem can be easily solved with a water system of some kind, there is no longer an excuse for anyone anywhere to do without running water.

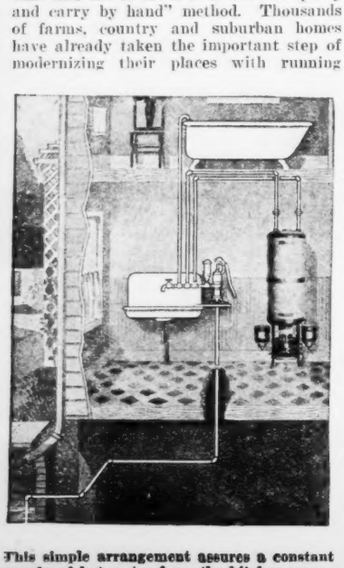
Your home or farm may be small. You may live in a mansion with many acres

The new "iceless" refrigerator, shown in the corner of this kitchen, uses kerosene for its "motive power" and uses but a pint a day.

and eases the deadweight burden of lifting and carrying water. Its labor-saving current is an important aid in powering the electric iron, the toaster, electric-driven egg beater, mixers and similar kitchen appliances.

The Water Supply

Everyone is interested in running water for his home or farm. Everyone recognizes the conveniences it provides and the time and toil it saves over the "old pump and carry by hand" method. Thousands of farms, country and suburban homes have already taken the important step of modernizing their places with running

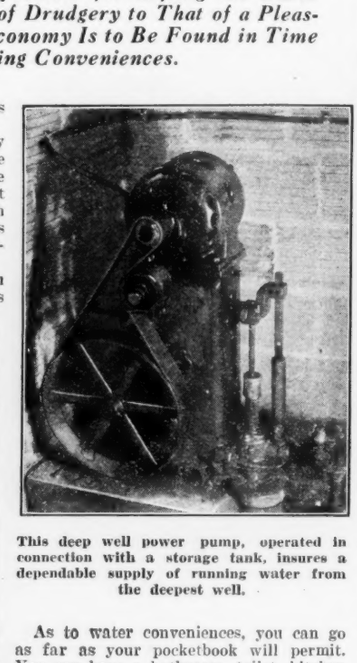


This simple arrangement assures a constant supply of hot water from the kitchen pump.

of fruit and grain surrounding it. Your family may be small or it may be large, and you may have a few or hundreds of head of stock to care for. Be this as it may, you can now obtain a dependable water system from a reliable manufac-

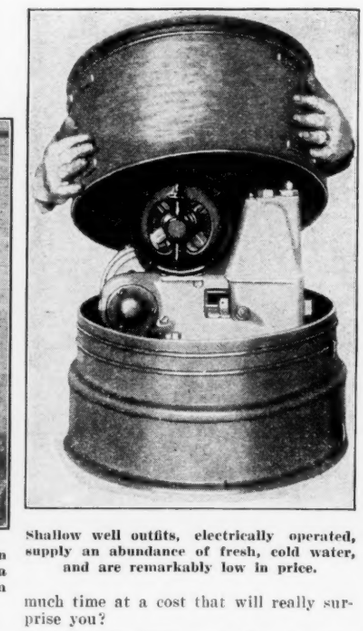
The popular gasoline pressure stove, generated with a single match, produces an instant hot flame.

turer that will meet your own home or farm requirements. There are systems to be had of both small and large capacity. There are systems to be installed inside or outside of the house or other buildings. All of them will provide running water at the turn of a faucet. Many of them are automatically controlled and require practically no attention.



This deep well power pump, operated in connection with a storage tank, insures a dependable supply of running water from the deepest well.

As to water conveniences, you can go as far as your pocketbook will permit. You can have a bathroom, toilet, kitchen sink, laundry, as well as water for spray tank filling, sprinkling, stock watering and fire protection. All of these labor-saving conveniences can now be had very easily and economically if you desire them.



Shallow well outfits, electrically operated, supply an abundance of fresh, cold water, and are remarkably low in price.

much time at a cost that will really surprise you?

Hot Water from the Kitchen Pump

A practical and inexpensive method has been devised by which homes having a well, spring or cistern can have steaming hot water from the kitchen pump. All of the longed for comforts and conveniences of hot running water at the kitchen sink, bath tub, or laundry tub are provided without the expense of an attic

The kerosene water tank heater followed naturally after the kerosene stove, and supplies hot water without over-heating this model kitchen.

And here is the reason why everyone should have running water. Life is too short to continue to pump and carry water by hand. Water is used from morning until night. Many tons of it are required every year for ordinary uses while the burden increases accordingly where there is stock to be fed and watered. Every member of the family is a member of the water brigade. The burden falls on the shoulders of both young and old. Why continue to accept and bear this never-ending task when it is so easy to load it onto a water system that will never complain or become tired or overworked, and that will supply you with so many conveniences and save you so

storage tank or a pressure tank pumping system.

It is very simple. An ordinary hand operated force pump, a three-way valve and a standard hot water tank, in addition to a small amount of pipe, is all the plumbing equipment that is necessary.

A kerosene burning water heater will keep the tank filled with hot water, and the three-way valve makes it possible to pump hot water from the tank or to pump cold water from the well.

Gasoline Stoves

Hard fuels—coal, wood, coke—have no place in the modern kitchen during the

(To Page Eighteen)

Use Care in Handling Strawberries

By W. H. HALL

U. S. Dept. of Agriculture

NOTE: This is the first of a monthly series of articles on packing fruits and produce for the South Water Market of Chicago, where fruits and vegetables are received from every state in the Union. Mr. Hall's connection with the United States Department of Agriculture and his daily intimate contact with the great Chicago fruit and produce market make his observations of vital interest to all shippers to this market.—EDITOR.

THE FARM VALUE of the annual strawberry crop is conservatively placed at $17,000,000, ranking ninth among all fruits in total carlot movement. Owing to its highly perishable nature and the price influence exerted by unfavorable weather, it is believed that the marketing of no other fruit is fraught with greater risk. The uncertainty of the weather is a continual bugaboo to growers and dealers alike, and, unfortunately, it is something beyond the control of man, so we may as well forget this marketing factor in endeavoring to arrive at a clearer understanding of what new or modified methods should be applied to reduce losses.

Vastly improved transportation and refrigeration facilities, quicker handling in the terminal markets, investigational work by well trained pathologists and entomologists, have done a great deal to reduce losses incident to decay and insect pests, but the work of all these agencies will fall far short of attaining their purpose unless the growers realize the true situation and work in harmony with the other interested factors.

Viewing the problems of the industry from a strictly impartial standpoint, and speaking from first hand information gathered over a period of many years, the conclusion is reached that greater care in picking, grading, packing and marketing will increase profits. If every grower and shipper could visit one or more of the large receiving markets during the height of the strawberry season, it would be time and money well spent. Here they would see the best and the poorest stock from the various sections. They would understand why some lots bring big prices and others sell for less than freight. Trade preferences as to varieties, packs, maturity, condition, etc., could be obtained from talks with the dealers, who are no less interested than the grower, as they have an earned equity in the industry, either by reason of having bought the stock outright, or by assuming the responsibility of selling it for the shipper.

Picking an Important Factor

Assuming that berries are sorted and graded at the packing shed, this does not lessen the need for close supervision of pickers, who are paid so much per quart or pint instead of on an hourly or daily basis. Furthermore, many of the pickers are children, or that type of grownups who cannot reasonably be expected to view the picking in any other light than that of a purely mercenary proposition.

Immature, damaged, dirty, picked without a stem, or otherwise inferior stock, will, or at least should be, thrown out at the packing shed. This not only takes time, but what is perhaps of more importance, this extra handling damages the good stock and invites decay. A good field foreman is a real investment where the owner is unable to personally look after the picking. A poor or ordinary foreman is little, if any, better than none at all.

It is not thought necessary to go into details regarding maturity, length of stems, poorly shaped or damaged berries, proper conditions under which picking should take place, etc., as to do justice to all of these would require considerable space, but suffice to say that nothing should be put into the boxes that the consumer will not buy at a price that will insure a profit to the grower. Also keep clearly in mind that any picking process that tends to produce decay, such as bruising, or picking immediately after a rain, should be avoided.

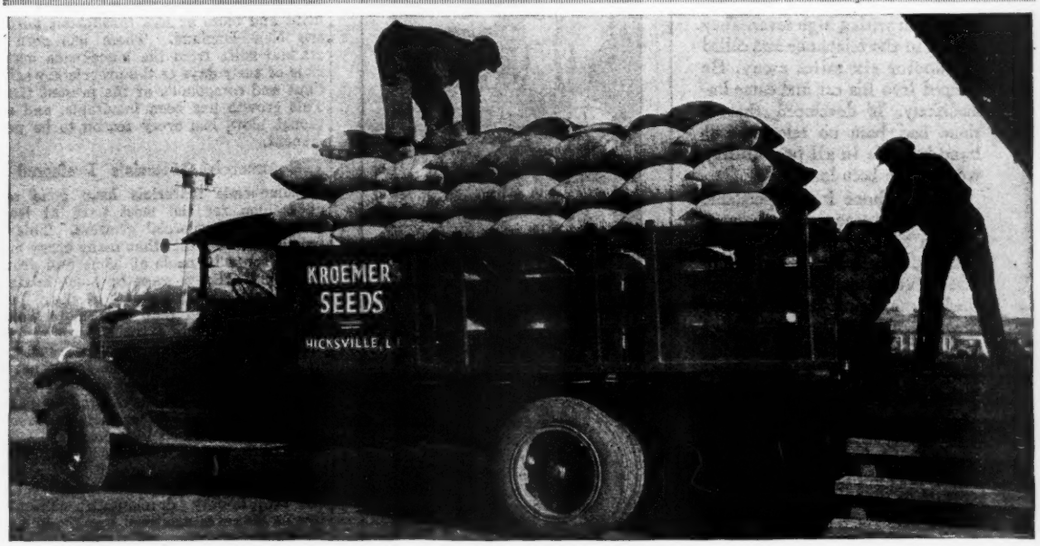
While decays of several different kinds are quite prevalent, especially during excessively hot or rainy weather, decay does not, like Topsy, just grow. Something goes wrong somewhere, else it would not occur. Damaged berries offer an opening through which living organisms enter and start work, a process which is commonly known as decay. It is a common sight in the large markets to see large quantities of strawberries leaking through the crates, or entirely covered with mold—worth little or nothing, and the regrettable part of it is that much of this loss could be prevented by proper handling.

Putting up a good uniform pack cannot be too strongly emphasized, and after having established a reputation for this, the shipper will soon learn that there is a steady demand for his fruit at a price substantially above that for ordinary stock. The shipper who puts in inferior stock, thinking that the consuming public is not discriminating enough to distinguish between good berries and just ordinary berries, is sadly mistaken, and one might easily imagine from the quantity of inferior stock shipped that some such thought was in the mind of the shipper when he allowed this kind of

(To Page Sixteen)

Dollar-Making Experiences in High Speed Farm Transportation

READER, NOTE: This is the third of a series of Fruit and Produce Growers' Personal Experiences, relating to the **Profit Side** of high-speed haulage, which should be of especial interest to those who recognize the all-important part the SPEEDY MARKETING of farm products plays in making farming PAY.



"We Find It Easy to Keep Up With Pleasure Car Traffic!

—and we cover 175 miles a day—making 100 stops for sales"

"OURS is a business of fast deliveries. We average about 20,000 miles a year and during the busy season run from 100 to 175 miles a day averaging from 20 to 100 stops each day. Naturally, we have been offered every other truck manufactured but our 14 years' experience has convinced us that we have fewer repairs, our operating expenses are always lower, our first cost is lower, and we can always get speed when we want it.

"Over a thousand farmers on Long Island buy their seeds from us. In 29 years we have built up a business of over a half-million dollars. We have on our books grandfathers, fathers and sons.

"Traffic is congested on Long Island but we find it easy to always keep up with pleasure car traffic.

"Many farmers have asked us about trucks and we have always advised them to buy Reo Speed Wagons.

"Wishing you continued success and thanking you for the uniformly good service we have always obtained, we are"

Yours very truly,
WILLIAM KROEMER
WILLIAM KROEMER, JR.

Talk to Men Who've Studied Your Business

Before You Buy Any Make of Truck

For 14 years, Reo has pioneered the field of farm product transportation.

Farmers' needs have been studied by experts. Then special Speed Wagons built to meet those needs.

Reo does not employ ordinary "salesmen." You talk over your problems with a qualified *Farm Transportation Specialist* whose sole business it is to serve you. He tries to "sell" you nothing and if he can't serve you, he won't sell you. Please remember this.

Long-Lived Service

Over 175,000 Reo Speed Wagons have been built and sold in the last 14 years. Some have been in constant operation 12 to 14 years. Scores have traveled 250,000 to 800,000 miles. That's 25 years of use the average farm would give it.

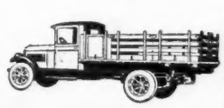
Reo Gold Crown Engine

Specifications: New Gold Crown engine—with chrome nickel-steel cylinder block, seven-bearing crankshaft, and full pressure lubrication. 4-wheel 2-shoe, internal hydraulic brakes. Magazine chassis lubrication. Air-cushioned seats. And full equipment. Eight wheelbase sizes—from 134 to 179 inches—in tonnage capacities of 1½, 2 and 3 tons. Priced from $1,295 to $2,240—F. O. B. Lansing, Michigan.

REO SPEED WAGON

Reo Speed wagons also in ½ ton and 1 ton models, ranging from 115-inch to 138-inch wheelbases. Priced from $895 to $1,075—F. O. B. Lansing, Michigan.

REO MOTOR CAR CO., Lansing, Michigan.



Master Speed Wagon, 2-ton capacity. Platform type body adaptable to all 'round farm use. Husky 6-cylinder motor and 4-wheel (2-shoe) internal hydraulic brakes.

Speed Wagon Tonner with curtained express body. Six cylinders, 4-wheel (2-shoe) internal hydraulic brakes. Handles its capacity load of 2,000 lbs. with ease—swiftly and economically.

13 Sizes to Choose From

Copy No. 117—Job No. 8528—6¾" x 150 lines—American Fruit Growers—May

The Little Girl was taken Ill . . .

A Bell System Advertisement

A FARMER's family in Pennsylvania had guests visiting them from the city—a man, his wife and a young daughter. Suddenly the little girl was taken with a high fever. They rushed to the telephone and called the doctor six miles away. He jumped into his car and came immediately. It developed that if there had been no telephone at hand her life in all probability would have been lost.

The telephone is a dependable aid in any emergency. It summons help in time of fire, accident or sickness. It calls the repair man in case of breakdown. It is never too tired to run errands to neighboring towns.

And whenever there is something to sell, telephone calls will find the best prices. A New York farmer got $20 more on 2000 pounds of hogs by telephoning two other dealers after one had made him an offer. A Colorado farmer got $300 more on a car of cattle by telephoning the Denver market. The telephone pays for itself many times over.

The modern farm home has a telephone.

If your subscription is about to expire (see date on address label) send your renewal now, so as not to miss any copies. Keep your file complete.

It is the truest kind of economy

to use only

Nichols Triangle Brand Copper Sulphate

99% Pure

Bordeaux Mixture, made with Triangle Brand, is full strength—not diluted with foreign matter or inert impurities that have no effect upon plant diseases.

Triangle Brand is always packed in clean, specially made barrels.

LARGE CRYSTALS—SMALL CRYSTALS—PULVERIZED

Nichols Copper Co.

25 Broad Street **New York**

Commercial Sprays in Northern New England

New England Growers Are Noted for Their Conservatism, and Likewise for Their Common Sense. Their Adoption of Better Materials That Have Proved Superior in Orchard Practice May Account in Some Measure for the Beautiful Appearance of New England Apples.

By M. B. CUMMINGS

University of Vermont

COMMERCIAL spray materials have come into quite general use in Vermont and more or less throughout northern New England. There has been a gradual shift from the home-made materials of early days to the proprietary solutions and compounds of the present time. This growth has been inevitable, and although slow, has every reason to be permanent.

Commercial Materials Preferred

Home-made materials have gone out of fashion for the most part, at least among the commercial growers. This is true despite the fact that many spray materials could be made at home and growers might make a wage by home mixing. As a matter of fact, most of them have become convinced that it is more worth while to put their extra effort and special thought to other problems, such as improving the culture of the fruits, grafting the older varieties to superior sorts, improving their methods of grading, packing and marketing, rather than to attempt to save a few dollars by doing some work at home for which they are not especially fitted.

Spray materials in Vermont have had an evolutionary development. Twenty-five or 30 years ago most everybody used Bordeaux mixture, not merely for potatoes and other vegetables, but for all orchard fruits. There was an era for kerosene emulsion, but the oil-water sprays were never very satisfactory because they were probably not precisely made or carefully and effectively applied. The advent of San Jose scale, the discovery of bark louse and its injuries, the appearance of blister mite, made a dormant spray a matter of necessity. This brought in the caustic lime-sulphur as a winter application. When fruit growers had to have lime-sulphur as a dormant solution, and when they experienced spray injury with Bordeaux, many shifted to the liquid lime-sulphur, to be much diluted for summer applications. It is doubtlessly true that even today lime-sulphur in some form is used more than any spray material in Vermont.

Miscible Oils Advocated

Just two years ago the European red mite made its appearance in a few isolated places among the commercial growers and the advent of this pest emphasized the importance of the oil sprays, so that wherever the European red mite was found, some type of oil spray was used to control it.

The pear psylla is not a problem in Vermont, as there is no commercial culture of this fruit in the Green Mountain State. The pear is only grown on a small scale either for home use or for a small local market. Consequently, the use of oil sprays for this pest has never come to the recognition of Vermont orchardists. Thirty or more years ago there was a thriving industry in pear culture in some portions of Vermont, but pear blight with all of its possibilities for harm came just before efficient and scientific control of this disease was worked out for practical growers. So pear growing as an industry was wiped out and was replaced by the apple, which is the only highly important commercial fruit, aside from the strawberry, in northern New England.

At the present time Scalecide, Sunoco spray oil and a few other miscible oils are advocated among Vermont orchardists, and are seemingly satisfactory. The lubricating oil emulsions probably are very effective, but owing to their complications and variable properties, they have not become popular. It is doubtful if more than a half dozen men are using any kind of the home-made lubricating oil emulsions. Oil-Bordeaux is not in use at all.

Dry Lime-Sulphur Replacing Liquid Form

With the improvement of dry lime-sulphur, this powdered material is rapidly replacing the liquid lime-sulphur, for several reasons. In the first place, it is more convenient to handle and more pleasant to apply. It can be stored with less attention to or danger from freezing than any of the liquid sulphur forms. It goes readily into solution and thus meets the present day requirements for immediate usage. The cold winter seasons of northern New England make the storage of liquid lime-sulphur somewhat of a problem, as it is better if the material does not freeze.

Spray injury in Vermont resulting in russeting and streaking of the fruit and danger to the foliage was of rather common occurrence in 1927 and 1928. Some of the growers using liquid lime-sulphur added iron sulphate, also known as copperas, one pound to 50 gallons of diluted lime-sulphur, as a means of reducing spray injury. It seemed to work well.

New Materials Used Cautiously

Generally speaking, it does not appear that northern New England fruit growers have suffered much from the misuse of untried commercial preparations. In fact, the cases of that sort are so few and far between that this feature of the problem becomes negligible. For the most part, the growers have been cautious in the use of new materials until they have proved their worth in several seasons and in several places. They have tried out new materials on a small scale, but they have very generally adopted the better materials as soon as satisfied of their safety and real value.

Controlling Plum Pest with P. D. B.

AN EFFECTIVE method of controlling the plum tree borer that is also inexpensive has been developed by the Zoology-Entomology Department of the South Dakota Experiment Station.

The new remedy is simple and its estimated cost is not in excess of three cents per tree, according to Prof. George I. Gilbertson, of the department. Ordinary paraffin is melted and paradichlorobenzine, or P. D. B., is added at the rate of one part to nine parts paraffin. A thin coat of this solution—one pint to every four or five trees—is then brushed on the trunks and larger branches of the trees.

When it hardens, the paraffin-P. D. B. combination forms a protective coat which does not chip off in summer temperature and which allows the dissolved P. D. B. to vaporize slowly and enter the tissue of the borer and kill it. The fumigating action continues for several days until the larvae of the borer are dead.

This method is believed to be the first practical and effective control ever produced during two decades of research.

Lemons are graded and packed to an accompaniment of radio music in the packing room of the San Fernando Heights Lemon Association, one of the units of the California Fruit Growers' Exchange. With the aid of amplifiers all the workers are able to hear the music instead of the clicking of machinery. The music is not kept going continuously.

Shrubs that bloom early should not be pruned until after blooming. Late-blooming shrubs, such as hydrangea, should be pruned early in the season.

Advantages of Federal Farm Loans

THE OLD MELODRAMAS in which the village cut-throat loan agent took a mortgage on the farm of the old folks for the purpose of foreclosing on the old homestead and thus not only get possession of the farm but win the hand of the fair daughter, only to be thwarted in his nefarious undertaking by the return of the wayward son just in time to pay off the mortgage and kick the old Shylock out of the door, were by no means based upon pure fiction. They were most popular in the country theatres or what was known as the "kerosene circuit" and there was ample reason for this. Many farmers in the audience had witnessed just such scenes enacted frequently in their neighborhood, so that the "just desserts" given to the village skinflint in the dramas afforded them just the sort of "kick" they liked best.

Farmers Benefit by Long Term Loans

Probably the federal land banks, which started business about a decade ago, were more responsible than any other agency for the passing of this type of melodrama, for they changed the facts upon which the dramas were based. These banks made it unnecessary for the farmers to borrow for short periods, and so long as the borrower kept up his installments, amounting to very little more than simple interest, the loan would not be called. Thus it became very unpopular for any lender to foreclose upon a farm without absolute necessity. In fact, the reverse of the situation depicted in the old melodramas now prevails. Many of the commercial banks which lend only for short periods have found it desirable to keep the mortgage on the farm even though the farmer is nearly insolvent and let him try to work out his own salvation. Bankers have found that their job as bankers does not include farming.

The 12 federal land banks not only introduced the long-term loan running for 30-odd years, but they are responsible for bringing about a much lower rate of interest on first farm mortgages. In the old days before these banks started business, particularly in states west of the Mississippi and in many parts of the South, interest rates even on first mortgages ran as high as 10 to 15 per cent per annum. It is not difficult to imagine the savings which farmers made when the five or six per cent loan was introduced by the federal land banks. It has been estimated, and, I believe, accurately, that there has been a saving of two per cent in interest on farm mortgages throughout at least three-fourths of the United States. That is an average. In many parts of the country the saving, of course, is very much greater.

The co-operative federal land bank loans have been the pace-makers in interest rates virtually all over the United States. Other agencies have strenuously endeavored to meet these low rates of interest so that the saving in interest rate attributed to the co-operative system can be applied to the whole nine billion dollars, which represents the present farm indebtedness in the United States. If the federal land banks are responsible for a saving of only two per cent on two-thirds of this nine billion dollars, the figure still is of staggering proportions and represents a titanic service to agriculture.

The Amortization Feature

Also, the amortization of the loan was never practiced in this country until it was introduced with the passage of the Federal Farm Loan Act of 1916. This Act was an adoption or adaptation of the century-old practices of Europe. The amortization feature has made it possible for more than 400,000 borrowers gradually to make semi-annual installment payments on the principal of their loans. Thus, not only have the farm mortgages of these borrowers been funded for 30-odd years, but they have had an opportunity to save systematically and have cut down their debt approximately $93.-000,000. For instance, most of the banks are now lending on five per cent interest rate. The total installment paid upon a co-operative federal farm loan is six per cent. This includes the payments on the principal, as well as the interest. A loan of $1000 requires the payment of $30 every six months; $25 of the first payment goes for interest and $5 is applied on the principal. In each succeeding payment more money is applied to the reduction of the principal and less is required for interest. Thus, in 72 semi-annual payments the debt is amortized, that is, killed off.

That the farmers have turned to the Federal Farm Loan System for the purpose of funding their existing debts and doing away with the short-term—three to five year—loans is borne out by the fact that of the more than a billion dollars outstanding in loans, about two-thirds of the money was advanced for the purpose of paying off short-term loans. The balance has been used to buy equipment, stock, clear land, improve buildings, or purchase additional land. Under this system, a farmer may, if he has the collateral and can otherwise qualify, borrow as high as $25,000 on his farm, but loans of less than $10,000 are given the preference; the average loan is around $3000.

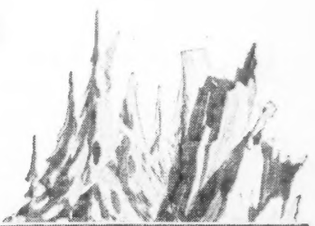
Qualifications for Securing a Loan

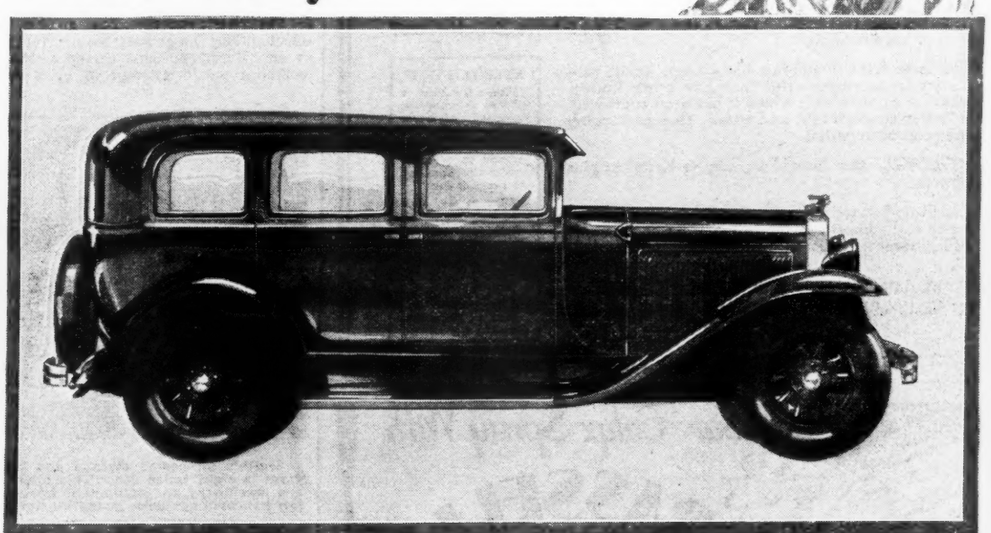
The security required for a loan, of course, is the farm. It must be a complete farm unit with the necessary buildings and sufficiently well developed so there can be no question of the average farmer's ability to make a living, gradually improve the farm, meet taxes, and insure the payment of installments on the loan from the profits of the farm. In order to do this, of course, the land must be appraised from the standpoint of its ability to produce. On this basis, the law permits a loan up to one-half of the valuation of the land for agricultural purposes and one-fifth of the valuation of the permanent, insured improvements. Of course, it is assumed that the borrower is a good moral risk and financially sound, otherwise there would be no loan.

When the federal land banks introduced the long-term loan they made it unnecessary for borrowers from them to

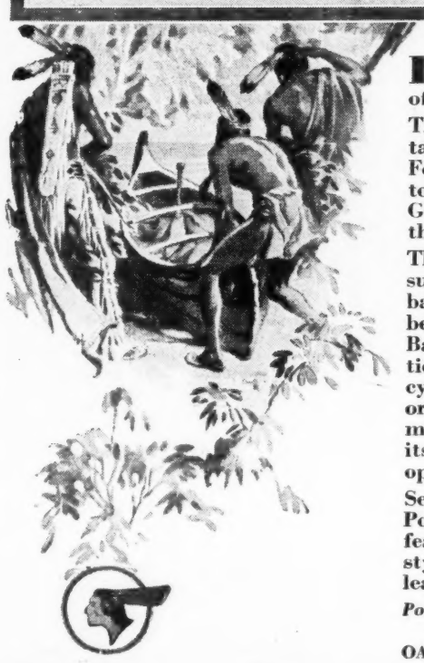
(To Page Eighteen)

Its Greater Smoothness Spells Greater Economy . .





The 4-Door Sedan • Body by Fisher



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That is why they always sit up and listen when you talk about the smoothness of the New Pontiac Big Six. For they appreciate that smoothness means as much to a car as it does to a separator. And this splendid General Motors car has this quality in a greater degree than ever before.

The New Pontiac Big Six derives its smoothness from such features of advanced design as the dynamically-balanced counter-weighted crankshaft which reduces bearing pressure at high speeds—from the Harmonic Balancer which practically eliminates torsional vibration from the crankshaft—from the new G-M-R cylinder head, which minimizes knocking, even with ordinary gasoline. And the New Pontiac Big Six is more economical because this smoothness lengthens its life and keeps down the costs of maintenance and operation.

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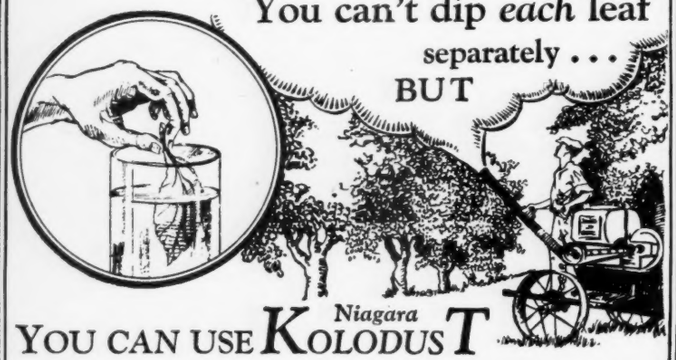

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An Experiment in Marketing

By G. L. SMITH

IT IS MY desire to attack the subject of marketing from what may seem to many a strange point of view. Let us fruit growers imagine ourselves to be the buying public and let us look at ourselves, what we have to sell and how we offer it. From this vantage point we may discover some valuable ideas that might be developed and capitalized upon to our advantage in creating the kind of demand for our products that will lead to profit.

Let me enumerate here what I consider the essential factors affecting the success of any venture wherein the grower himself merchandizes more or less directly to the consumer the produce he grows. Incidentally, most of the factors have a bearing upon the reactions of the consuming public. I will enumerate them in the order of what I consider their relative importance: A consuming public; location; quality products, variety and price; dependable supply of standardized products; business good will.

Why a Consuming Public?

We might use a little deduction on this question. The more people, the greater the consumption. The greater the consumption, the greater the demand, and so on. Surely no sane person seeking a livelihood would attempt to grow cranberries on the great American desert 100 miles from a railroad. Climate, adaptability, transportation facilities, labor, perishability and competition would all take their merciless toll, but of no less importance is a consuming public, large enough and close enough to absorb the product so that no demoralizing surplus will wipe out the margin of profit necessary to remain in the business of producing that particular article.

These factors, consuming public and location, are considerably interlocked. They represent the fundamental conditions that must favorably exist before any venture or undertaking should be attempted. They predetermine the chances for ultimate success or failure. The man who ponders well on these fundamental prerequisites establishes a firm foundation for the strongest forces working for failure and ruin.

What About Quality, Variety and Price?

I place quality, variety and price of next importance. It is principally a discriminating public that we have to deal with. Competition in merchandising has been the chief factor in educating the consumer to a high degree of efficiency as to how he spends his money. If you disagree with me, let me ask you this question, "What in your opinion has popularized with the American housewife, the grocery store operated under the chain system?" Well, in substance, the managements of the chain store systems are giving the public what they want and quality, variety and price seem not to have been neglected in their scheme of merchandising.

Necessity is often quoted as the mother of invention. Low cost production, convenience, public demand, plus the power of the press, are the necessary contributing factors to standardization. When our needs are satisfied one after another, the process in the procuring of them becomes a habit. A habit once formed will remain perpetual only if there exists a dependable supply. It has been rightfully said that habit is the working of the subconscious mind. Failure, therefore, to furnish a dependable supply, will cause keen disappointment, arrest attention, cure the habit and result in a lost customer.

Business Good Will

Business good will constitutes the etherial assets of any enterprise. Without it, a business may exist but never boom. The most humble vender of peanuts and popcorn may be vastly rich in what we call business good will. His smile, his cheerfulness and kindly "thank you," if that is his cultivated nature, may build up a reward that money cannot buy. Any permanent successful business looks upon its business good will as its most priceless treasure. Choose any successful business in your community that has the respect of its citizenship and give it a close analysis. Most all the features enumerated here will be found very much in evidence: Efficiency, courtesy, service, personal interest, honesty, square dealing and educational interest. A composite of all these essentials makes for what we call personality in business.

Smith's air-cooled storage and sales room annex in Rock Island, Ill. The fruit farm is eight miles out. This plant is completely equipped with all the most modern machinery and equipment known to the business of fruit growing, and is insulated throughout with insulating lumber manufactured from sugar cane fiber.

Application to Fruit Growing

The wise fruit grower, who is always a student of all the phases of his business and who profits by experience, observation and study, will bow in approbation to the five salient points necessary for success that have been enumerated. Novices of all kinds have embarked in the fruit growing business with but little knowledge of the subject, consequently they have erred. Their failure, too, is mitigating the success of legitimate honest-to-goodness growers, because the novice is generally the one who floods the market with culls and otherwise helps most to inducee a demoralization of fruit markets.

Tree Records Kept

MANY citrus producers in California are now keeping records of the production of each tree in their orchards. These individual tree records enable the growers to locate good orange, lemon and grapefruit trees from which to take bud wood for top-working poor trees. They also indicate the trees that need individual care, and furnish reliable data on which to base conclusions concerning the results of orchard practices.

In Farmers' Bulletin No. 794-F, "Citrus-Fruit Improvement," recently issued by the United States Department of Agriculture, A. D. Shamel describes the method of keeping and using tree-performance records and comments on the results obtained by those who have followed the practice over a period of years. A copy of the bulletin may be obtained by writing to the United States Department of Agriculture, Washington, D. C.

CHATS with the Fruit Grower's Wife

By HAZEL BURSELL

Washing Woolen Blankets Before Storing

WITH the sure approach of warm weather and the final lap of the annual spring housecleaning marathon, the blankets which were in service during the winter gradually find their way to the laundry. Blankets, whether all-wool or only part wool, require very careful laundering to prevent shrinking and "felting" or matting of the fibers. By the use of proper washing and drying methods, however, you can preserve the original softness and fluffiness of the new blanket throughout its long period of service.

The first thing to do is to choose for the washing a cool, breezy day to insure proper drying. Blankets must not be dried in the sun if they are to be fluffy when dry.

Need Washing Machine

The next step is to arrange the laundry equipment. A washing machine is absolutely essential for the successful washing of heavy blankets, both to save the blankets from rough handling while wet and to save the already overworked housewife from the unnecessary heavy lifting involved. A power washer with a whirling extractor compartment (the latter eliminates wringing of any kind), is by far superior to the old-fashioned hand power machine with attached hand wringer. If a gasoline engine, electricity or any other source of power is available on the farm, then the old washing machine should be changed to power drive through the use of belts and pulleys or a motor, or, better still, one of the new, improved models should be purchased. Anything that saves Mother's time, health and energy is a worth while investment.

The washing machine should be placed so that it can be filled and emptied through the use of a hose rather than by the tedious process of hand dipping. It should be placed near the tubs and the hot and cold water faucets to save steps and effort in transferring blankets and washing materials.

Next we should prepare the water for washing. Since both heat and cold shrink woolens, we must use lukewarm water for both washing and rinsing. The water should be kept at 100 degrees Fahrenheit, or less, as much higher temperatures make the wool fiber harsh and inelastic. Use a thermometer, if necessary. Remember that 100 degrees is but slightly warmer than blood heat. Heat also has a tendency to "yellow" white garments or blankets.

Dissolve Soap First

Use a mild, neutral soap, preferably in the chip or flake form. Dissolve the soap flakes thoroughly in a small quantity of hot water before bringing the water in which the blankets are to be laundered down to the prescribed lukewarm temperature. When using hard water, soften it with the mild alkali, borax, until the soap will make good suds. Dilute ammonia may also be used, but washing soda is too strong an alkali for woolens. Hard water "cuts" the soap and at the same time leaves a harsh-feeling deposit on the supposedly clean blankets.

Now we are ready for the actual washing process. After the machine has been properly filled with lukewarm soap suds, place not more than one double blanket or two single blankets in the machine at a time and wash each for about 10 minutes. Do not rub any soiled spots, as rubbing tends to break and mat the fibers. It is far better to wash them in a second or third water if they are badly soiled. If you must wash by hand, work by squeezing the blanket up and down in the water, depending on the passing of the suds in and out of the fabric to loosen the dirt. Handle wet woolens gently. Never allow the blankets to soak in the water for any length of time. It is advisable to use clean suds for each separate blanket washing.

Squeeze out the water lightly after washing and rinse in two or three clean lukewarm waters (about 100 degrees Fahrenheit). Run the machine about five minutes for each rinse. Do not use bluing. Thorough rinsing is more effective in keeping woolens from turning "yellow" than any bluing could possibly be. Some persons believe that leaving a little soap in the rinse water makes woolens softer and fluffier, but this theory has also been disproved by careful experimentation. The process not only *does not* keep them soft, but it hastens mildew in woolens and causes the fabric to soil more easily.

Extractor Is Best

Wringing is very important in the washing of blankets. They must never be twisted or squeezed tightly in any way, as they tend to mat and shrink when so treated. If your machine is of the wringer type, release all possible pressure or tension on the wringer rolls, then carefully fold the blankets lengthwise and put them through. If you have a power machine and it is equipped with one of the efficient spinning-basket extractors, use it by all means, allowing about five minutes for extracting the water sufficiently.

The drying of woolens needs as much care as the washing. Blankets must never be hung in the sun to dry, neither can they be dried properly in a hot room. After extracting the water, hang each blanket evenly over the line, preferably out-of-doors, with one-half of the blanket on either side of the line. Gently square the corners and straighten out the edges, but do not stretch the edges into scallops. Remember that as they dry, so will they remain.

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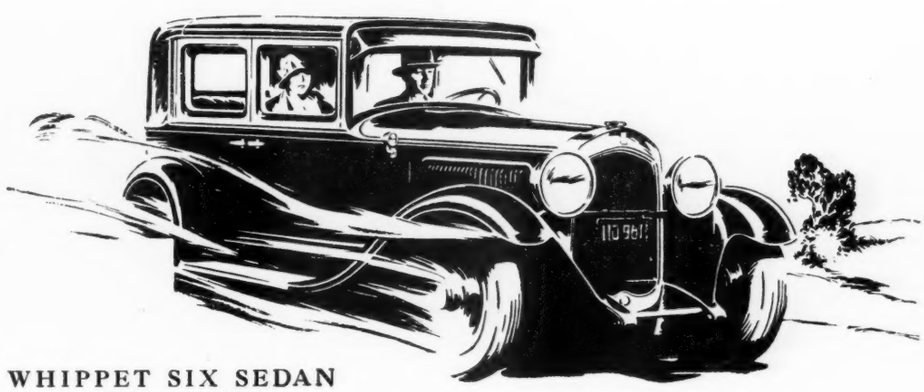

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Coach $695; Coupe $695; Coupe (with rumble seat) $725; De Luxe Sedan $850; Sport De Luxe Roadster $850 (including rumble seat and extras).

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Coupe $550; 4-pass. Coupe $580; Sedan $615; De Luxe Sedan $695; Roadster $500; 4-pass. Roadster $530; Collegiate Roadster $595; Touring $495; Commercial Chassis $380. All Willys-Overland prices f. o. b. Toledo, Ohio, and specifications subject to change without notice.

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Cane Fruits Bring Quick Cash to Northwest Growers

(*From Page Six*)

and the bearing area is confined primarily to the canes that come from the crowns of the original plants. In this way the plants can be held within definite boundaries and cultivation can be performed almost entirely by machinery. Besides, a more efficient mulch can be maintained, new cane growth is better protected and harvesting is made considerably easier.

In plantings where the canes are tall, it is necessary to employ a system of training that keeps the fruiting area within reach of the pickers. This may be accomplished by topping the canes about four and one-half feet from the ground (Fig. 2) or by weaving the canes on a wire trellis (Fig. 3). Recent experiments tend to show that better quality of fruit is obtained when the former system is used.

It is probably best to remove the suckers and excessive canes early in the season. Good results are usually obtained by leaving from six to 12 canes, depending upon the vigor of the vines. Old canes should be removed soon after the crop is harvested.

Black Raspberries. As compared with other cane fruits, pruning and training of black raspberries are simple operations. Trellises are not necessary and pruning need not be excessive or complicated.

Black raspberries do not send up suckers from the roots, and new cane growth is confined to shoots which originate at the base of the original plants. When the young canes come up in spring, they should be allowed to reach a height of 20 to 24 inches and then topped back to 14 or 16 inches. During the remainder of the summer, side branches or laterals will develop and the bearing area will thus be increased many fold. Pruning proper should be done in the spring before the buds open, and should consist, first, of thinning out the weaker canes so that the number will be reduced to four or five, and second, of tipping back of the laterals. The old canes should be taken out as soon as the crop is removed.

A very practical method of training black raspberries consists of tying the canes into a loose bundle as illustrated in Fig. 4. By this method the fruiting area is conveniently placed for the pickers and is out of the way for tillage operations.

Evergreen Blackberry. When once established, the Evergreen blackberry is a vigorous grower and unless carefully pruned and trained at regular intervals soon becomes unmanageable. It produces shoots from lateral buds at the base of the old canes and also sends up suckers from the roots. Usually it is best to rogue out the suckers and preserve only the canes that originate at the crowns. With healthy, vigorous vines from 10 to 16 canes may be saved for fruiting. Frequently, it is necessary to tip the canes so that they will not interfere with each other on the trellis.

Several methods of training for Evergreen blackberry are now in use and each has its advocates. Some growers use a trellis similar to that employed with red raspberries (Fig. 5), the fruiting canes being placed on parallel wires about four feet from the ground and the young shoots being allowed to trail underneath. Some object to this method because it affords no protection for the new growth, which is easily damaged by pickers and by tillage operations. This can be remedied, however, by installing an extra set of wires about two feet above the ground. In early spring the canes can be transferred to the upper wires.

The overhead system of training, (Fig. 6), is employed by some growers. In this case two sets of wires are used, the lower set accommodating the fruiting area and the upper set taking care of the new shoots. A disadvantage of this system is that there is difficulty in getting the new shoots through the fruiting area and on to the upper wires.

Still another system consists in training the new growth one year on the upper wires and the next year on the lower wires. In this way retraining in the spring is not necessary, the canes being left in the place where they grew. By this method, however, the fruiting area necessarily alternates from one set of wires to the other and consequently is not always conveniently placed for the pickers.

Insects and Diseases

The insects and diseases of cane fruits are fairly well controlled at the present time. Such insect pests as crown borer and cane maggot are held in check by removal of infested canes. The raspberry sawfly can be effectively controlled by applications of arsenate of lead. The strawberry root weevil was at one time a serious pest in cane fruit plantings but is now controlled by means of poison baits.

Fungous diseases, such as anthracnose and rust, are occasionally found but have caused no serious losses. Verticillium wilt of black raspberries is without doubt the most serious disease thus far encountered. No effective control measure has as yet been developed for this trouble. Non-parasitic ailments, such as winter injury and drought injury, are more or less serious during some seasons.

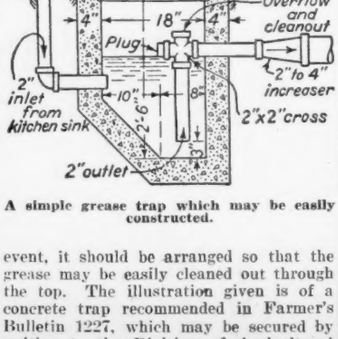
The Use of Grease Traps

By E. W. LEHMANN

AT REGULAR intervals I have inquiries from farmers relative to the installation of a grease trap in connection with drainage from the kitchen sink. Where a satisfactory septic tank is provided to take care of the sewage from the sanitary toilet and bathroom, it should have adequate capacity to take care of the waste from the kitchen without any additional equipment. Grease and fats that pass through the drain from the kitchen sink will not be in sufficient quantities to result in any harm if a regular sewer tile is used to discharge this material into the septic tank. However, if the wastes from the kitchen sink pass into an ordinary farm tile, there is a possibility of the tile stopping up, due to the fact that the water will seep into the soil and the grease will gradually accumulate at the tile joints.

Where conditions justify the installation of a grease trap, one should be installed that has several times the capacity of the greatest quantity of greasy water that is discharged into it at one time. This added capacity will allow the water to cool and the grease will congeal and rise to the surface of the water in the trap. On this basis the trap should have at least seven or eight gallons capacity. It should be so arranged that the discharge into the trap will not disturb the surface and the discharge from the trap will come from near the bottom of the container.

The trap may be made of a barrel set into the ground, or it may be made of more permanent construction, but in any event, it should be arranged so that the grease may be easily cleaned out through the top. The illustration given is of a concrete trap recommended in Farmer's Bulletin 1227, which may be secured by writing to the Division of Agricultural Engineering of the United States Department of Agriculture, Washington, D. C.



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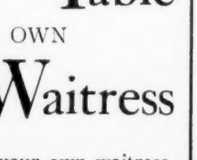

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Fruit Farm Engineering

By E. W. LEHMANN

Getting Jobs Done About the House

IT IS ALWAYS interesting to compare the capacity different individuals have for work. One man will accomplish so much in a day while another, apparently equally but no better endowed, will accomplish twice as much. Why is it? We say it is due to greater ability, more skill, greater efficiency, system, etc.

I called on an executive of a large company recently, a man who gets things done. He told me of a plan he followed for getting jobs done about the home that I believe will interest the readers of this magazine. The first step was to list all the jobs that needed to be done about the house. For example, (1) fixing screens on kitchen windows; (2) painting front porch; (3) painting screens; (4) cleaning up basement; (5) fixing chairs; (6) repairing screen doors; (7) fix cord for electric iron; (8) mow the lawn; (9) repair leaky faucet; (10) tighten car door; (11) polish floor; (12) make swings for children, etc. All of these jobs were listed on a slate conveniently located in the kitchen. As new jobs needed to be done, they were added to the list.

To get the work done, this man followed the practice of doing the job he wanted to do rather than forcing himself to do some job because somebody else wanted him to do it. Playing golf would become irksome if somebody wanted you to do it and asked you each day to play after a hard day's work had already been done. It would become a task rather than recreation. This executive made the home jobs recreation because he did the things he wanted to do. It was fun to fix the hydrant when it took no nervous energy to look up the tools and the washer needed and no one told you to do it. There was some satisfaction in checking that job off the list. The same is true of the other jobs. Try this plan of making a list and watch out so you don't run a race with yourself to make a new record, like the golf fan.

Adequate Equipment Essential in Farming

WHILE much is being said about the marketing of farm products, we should not overlook the fact that the net income depends on the cost of production as well as on the sale price of the product. Even under adverse conditions, there are some farmers who are making money and are paying out on their farms. These are the efficient farmers. Economy and efficiency must always be considered.

Power and labor are the most important items of expense in most farm production. To reduce these items of expense, it is essential that adequate equipment be available. To reduce the number of hours of man labor to do any task, it is necessary that the efforts of man be multiplied. This does not mean that every small farm can be equipped with the same sort of equipment as the large farms.

It is more expensive to plow with a walking plow than it is with a gang plow. With a good walking plow, a man and two horses can plow from one and one-half to two acres a day. Allowing $3 for the man and $3 for the team, the cost would be at least $3 an acre. With a gang plow and five horses, he can plow five acres. Allowing the same rate for man and horses, the cost would be $2.10 per acre. The cost of the equipment when considered on the acre basis would be about the same in both instances.

In cultivating crops, one man with a double shovel cultivator and one horse can cultivate two acres a day. With a modern one-row, two-horse riding cultivator, he can cultivate seven or eight acres a day. With a two-row cultivator and three horses he could cultivate about 15 acres, and with a modern type four-row motor cultivator he could cultivate 28 acres a day. Allowing the same labor charge, the cost would vary from $2.25 an acre to cultivate with the double shovel to 50 cents an acre with the two-row cultivator and three horses. The cost with the motor cultivator would be even less than this. The same kind of comparisons could be made with each type of equipment used on the farm. The hand pump sprayers have been displaced by the power pump sprayer where a number of trees are to be sprayed. The work is done at less expense and more effectively. The same is true of other jobs about the farm.

Speeding Up Operations

TIMELINESS is being recognized more and more as one of the most important factors in all types of farm production. Timeliness in planting affects the maturity and quality of the product. To delay seeding or harvesting is expensive and may result in loss rather than gain. Keeping machines in proper repair and ready for operation is one of the most important things the farmer can do to make it possible to carry on the work when it should be done. The farmer has no control over the weather, but he can have his equipment in first-class order so that the work can be done as soon as the weather permits.

The fruit grower is just as concerned about having his work done at the proper time as any other class of farmer. According to Dr. R. S. Marsh of the University of Illinois, many sprays are almost wasted because they are not applied at the right time. In some instances, there may be only a period of 48 hours in which the best results can be secured. It can be easily understood that the mistake may be made of spraying too early, as well as too late. According to Dr. Marsh, apple scab sprays should be applied within 48 hours following a spring rain which occurs when the small apple flower buds and young leaves are showing. Some fruit growers spray both night and day to get the work completed during the period when most effective results may be secured.

If you have not been getting your work done at the proper time, possibly it is due to the fact that you have either inadequate equipment or the equipment has not been in first-class order and has thereby caused delays. The general rule should be followed that if equipment needs repairs, don't delay, but make them at the first opportunity.

Prof. Robb of Cornell University, in writing about the importance of making machine repairs, states: "A certain farmer broke the tongue of his disk harrow and let it lie in his shed all winter without repairing it. When it came time to harrow the corn ground, he had to stop to mend the disk. This delayed him several days, then rains came on and in all he was delayed two weeks in planting his corn. That year an early frost came in the fall and his corn didn't mature. If he had been prepared, the two weeks' time he would have saved in planting would have matured his crop."

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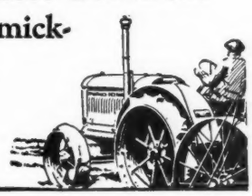

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The Versatile Garden Tractor

THE GROWER with a few acres of fruit, or with fruit and vegetable acreage, has often felt himself in a quandary in regard to the tractor question.

With his relatively small acreage of high priced crops, he has often felt himself limited to the use of horse power for cultivating, spraying and dusting. And the horse is expensive equipment on a small acreage.

The development of the small tractor has improved the situation for this class of growers. These tractors have now been improved to the point where they are practically indispensable on the "one-man" farm.

Recent models are equipped with a power take-off, and a variety of accessories may be secured to operate from the power of the tractor. Among these accessories that are of especial value to the small fruit, strawberry and vegetable grower may be mentioned the attachments for spraying and dusting rowed crops.

In the picture above is shown one of the most popular types of garden tractors with a dusting attachment. (Name and address of manufacturer will be sent on request.) The tractor develops ample power to thoroughly dust two rows of low-growing crops, such as beans, potatoes, etc., and helps to solve the crop protection problem for the grower of these crops.

Care in Handling Strawberries

(*From Page Nine*)

stock to go out. Poor berries injure the sale of good ones, when both are packed together, and, generally speaking, it would be more profitable to leave the poor stock in the fields, as it not only sells at very low prices, but also brings down the price of the better grades. When the grower selects strawberries for his table he selects the best, not simply because they are handy and cheaper than in the city, but because there is no place on his table for berries that other people would not want. The housewife in the city is just as particular about the quality of produce supplying her table as the housewife in the country is.

Government-state shipping point inspection work in the principal producing areas has been of great help in improving the grade and pack of this commodity. This work is in charge of trained inspectors, who work closely with the grower, using as a standard for their inspections established United States grades which have been carefully worked out by technical men thoroughly trained in their respective lines of endeavor. The fee charged for this service is small in comparison with the benefits obtained, and its steady growth is ample proof that the strawberry growers are coming to realize the importance of a strictly impartial inspection service in establishing and maintaining a suitable grade and pack.

Studying the Market Very Important

Owing to the highly perishable nature of this commodity, it must be marketed quickly. Under the most favorable conditions it can be held but a short time and when decay starts it is only a question of hours until the affected lot is a total loss. Knowing the best place to ship at all times is hardly within the bounds of possibility, and yet by a careful analysis of available market information, the well informed shipper is a long way ahead of the one who markets haphazardly, or, to use a slang phrase, plays hunches.

Government market news information is disseminated by mail, radio and through the columns of newspapers and farm magazines, so there is no legitimate excuse for any one not being posted on the market. Certain markets show decided preferences for certain varieties or types of packages, although the strawberry crate perhaps comes nearer to being considered a standard container than that for any other fruit or vegetable, when considered from the standpoint of variation in sizes. The 24-pint, 24-quart, 16-quart and 32-quart crates are used almost exclusively, and there are not more than three (and seldom more than two) types of crates used in any one section. The knowledge that a certain market is oversupplied, another has light supplies, there are heavy passings through gateways to certain markets, light passings to others, can be turned to useful account. Market preference for certain varieties, the usual good and bad trading days characteristic of the various markets, knowing the most reputable firms in the markets in which the shipper is interested, often means the difference between profit and loss.

A careful study of marketing is just as essential as that of growing and harvesting.

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Do you follow the splendid plan of adding some Home Convenience every year? Unless you do, you are not giving yourself and your family the continually improved standard of living to which they and you are entitled.

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Check the items. Write your name and address very plainly and send this coupon to:

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53 W. Jackson Boulevard, Chicago, Ill.

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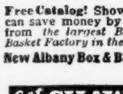

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Fruit Farm Poultry

By RALSTON R. HANNAS

Spring Culling

WHEN we speak of culling, we think of summertime — June through August or September—when the laying flock is generally culled and the non-layers are removed. This is the big culling time, but culling should continue to some degree throughout the year. This does not mean to catch up the entire flock regularly and handle each bird as is done in the summer culling, but it does mean a gradual weeding out process, in which the birds that give every appearance of having low vitality and of being poor layers, can be removed from the flock, as observed.

Right now, in the spring, is a good time to begin selecting from the laying flock the birds that are to be held over for breeding purposes. Of course, the final selections cannot be made now, but the process of elimination can be begun. There may be some pullets that are still laying but for some reason are not wanted for breeding purposes. Such pullets can be banded with a celluloid legband and kept until they stop laying, when they can be sent to market.

Some pullets may have started to lay early and gone to pieces; they are not wanted in next year's breeding flock, for they should have stamina to stand up under practically a full year's production. Other pullets may be overfat; get rid of them. Still others may go broody. In fairness to the flock, however, if the whole flock or a very large percentage of the birds go to pieces, molt, are overfat or are extremely thin, there is very likely something wrong with the management. This could not be held against the birds.

Spring is a good time to catch up the flock and handle the birds. It will not only give an opportunity to remove the birds that should be removed from the flock, but it will also give the flock owner a chance to see just what condition his flock as a whole is in and adjust his feeding methods to the needs of the birds.

Preventing Thefts

ONE NEW ENGLAND poultryman whom I visited has worked out a unique way of keeping chicken thieves from walking off with some of his stock. He merely floods his range with electric light.

He has two 500-watt lights in deep bowl reflectors rigged up in his bedroom windows that are switched on as soon as any suspicious noises are heard on the range where his growing stock is. He can do this because the range he uses one year is at the side of his house and the other range for use the following year is at the rear of the house; he moves the light each year, as his room is in the corner of the house.

A strong enough light is cast so that most of the houses are in easy view and a moving object can be seen to be shot at. A police dog is chained on the range near the house and he also gives the alarm. The lighting system has been successfully used for two years and was not expensive to install—the reflectors cost only $5 each.

To Keep Hawks Away

I RECENTLY ran across a very satisfactory way to keep hawks away from the poultry flock. This was by the use of birds somewhat smaller than hawks, called martins. These martins will get right on the backs of hawks and ride them, at the same time fighting and pecking at them. Hawks are afraid of them. Some claim that these martins will keep sparrows away, though this is denied by others.

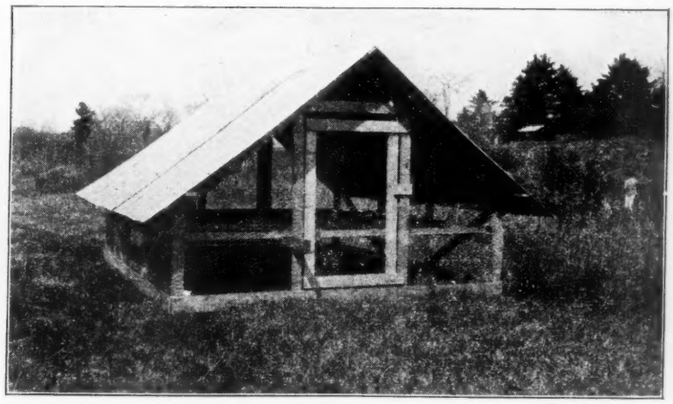
These martins are attracted to the farm by means of gourds which are hung up on crosspieces at the top of a pole about 15 feet in height. Small holes, about four inches square, are made in the gourds, and that is all there is to it. It is also claimed that small boxes, each containing a hole about four inches square, will attract them.

A Range Shelter for Stock

MANY flock owners have learned that in spite of the fact that the growing stock is on range at the season of the year when the weather is at its best, some sort of shelter must be provided. Protection is needed from the hot summer sun in the daytime and predatory animals at night. Furthermore, this protection must be provided in such a way that the house is not too hot at night.

A special range shelter that is popular in the New England states consists of a low A-shaped house, all the sides and floor of which are made of wire. The eaves are about two feet high and the peak about six feet. Both sides of the slope are made of solid material, either wood or building board. The sides are made of heavy poultry wire and the floor of the same material or of hardware cloth. The roosts are about a foot off the floor. The house can be easily carried by two men.

The purpose of the open sides is to provide sufficient circulation of air so the birds will be comfortable. If birds are crowded in a warm house, their vitality is lowered. They are given plenty of air in these shelters and at the same time are protected from predatory animals. A house that is 10 by 10 feet in size will accommodate 100 pullets. It is a very inexpensive house, the materials costing no more than about $12. If it is necessary to use the regular brooding houses as range houses, the addition of a few of these shelters will help considerably to relieve the crowded condition of these houses and will help to grow better pullets. Such shelters are also good for holding the reserve males.



Summer range shelter with open sides to allow for circulation of air. Such a house can be easily carried by two men. The shelter shown above was built at the New Hampshire State College of Agriculture. Several of the middle western states are also recommending similar houses

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ONE TREE $1.00
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PREPAID

The ROSE TREE OF CHINA (Prunus Triloba) is the most beautiful and showy of all small trees. It begins to bloom before the leaves appear in the spring, being literally covered with very double rose-like pink flowers. As an ornament from early spring until late fall it has few equals. This symmetrically formed, graceful little tree grows usually to a height of but 8 feet, and is attractive as a specimen or when planted in groups or shrub border. It is hardy and easily grown, and no lawn is so small that room can not be found for at least one of these wonderful trees. Many who have seen it declare it to be the most beautiful tree they have ever seen. The rose-like blossoms make fine cut flowers.

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Every Agricultural Experiment Station of every important fruit-producing State in the Union has proved that orchards must have bees to produce the largest and best crops. Fruit crops are often doubled and tripled, in both amount and quality, by the pollinating done by the bees.

OWN YOUR OWN BEES

While many orchardists now rent bees for the blossoming period, yet the bees often cannot be obtained when needed and the rented bees give the orchard owner no honey crop, which he might just as well have and which is very profitable.

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Manufacturers for more than 50 years — Pumps — Water Systems — Hay Tools — Door Hangers

Summer Conveniences for the Farm Home

(From Page Eight)

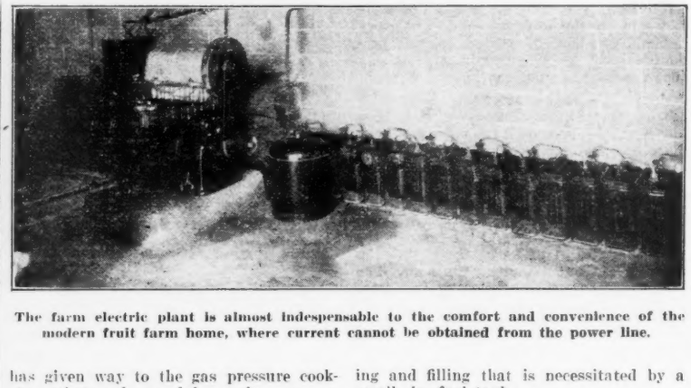
summer, as modern kitchen efficiency demands the use of stoves burning liquid fuel. These may be secured in a variety of models.

For the use of kerosene fuel, stoves may be secured either in the short drum or long drum type. Both types have their friends and advocates.

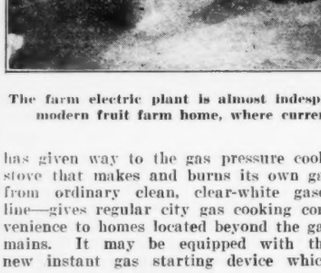
The old type of gasoline stove, however, has given way to the gas pressure cookstove that makes and burns its own gas from ordinary clean, clear-white gasoline—gives regular city gas cooking convenience to homes located beyond the gas mains. It may be equipped with the new instant gas starting device which lights instantly and quickly heats the generator so that in one minute or less it is possible to have any degree of cooking heat desired on any one or all of the burners which light with a match and make no further generation necessary.

The fuel tank contains one gallon of fuel which is supplied to the generator under air pressure. The stove is made so that it can be easily and quickly hooked up with a large size outside fuel tank which supplies an extra supply of fuel and does away with the extra pumping and filling that is necessitated by a small size fuel tank.

These stoves are furnished in sizes varying from a two-burner hot plate to large four-burner ranges with built-in ovens and broilers.



The farm electric plant is almost indespensable to the comfort and convenience of the modern fruit farm home, where current cannot be obtained from the power line.



The "waterless cooker" takes care of an entire meal with a minimum of heat, and it's a splendid aid through the canning season.

Kerosene Refrigeration

A new type of refrigerator has been developed for use in homes outside the reach of central station power. Any home with running water can have the convenience of modern refrigeration with this device, which is powered by the heat from burning kerosene.

Once a day the burners are lighted and no further attention is necessary. When all the kerosene in the reservoir, just a little more than a pint, is consumed, the burners automatically go out. With a single heating taking from 75 to 90 minutes, refrigeration sufficient for 24 to 36 hours is generated.

This line of kerosene-burning refrigerators includes six models having from five to seven cubic feet food storage capacities.

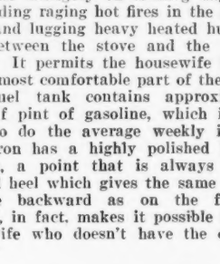
The Waterless Cooker

With the waterless cooker, the kitchen is never over-heated on hot days because only one burner, turned very low, is needed to prepare an entire meal.

The work of the canning season may be materially lightened by using the waterless cooker to process a few cans of fruit or vegetables each day along with the regular day's routine; thus entirely eliminating the long hot "canning days" from the summer calendar.

Fruits and vegetables are greatly improved by cooking without water. The waterless cooker will help to increase the family appetite for these economical as well as necessary summer foods.

The gasoline iron is self-heating—makes and burns its own gas—does away with the drudgery on ironing day, such as building raging hot fires in the kitchen stove and lugging heavy heated hunks of iron between the stove and the ironing board. It permits the housewife to iron in the most comfortable part of the house. The fuel tank contains approximately one-half pint of gasoline, which is sufficient to do the average weekly ironing. This iron has a highly polished ironing surface, a point that is always hot, a pointed heel which gives the same results on the backward as on the forward strokes, in fact, makes it possible for the housewife who doesn't have the convenience of gas or electric irons to do her ironing with more comfort and easier and quicker.



The gasoline heated iron is convenient, economical and safe.

Advantages of Federal Loans

(From Page Eleven)

pay commission every three to five years, cost of searching the title and other expenses which are incident to the making of farm loans. Since most farmers "live with their loans" rather than pay off their short-term loans, these expenses really amount to big items over the period for which a federal farm loan runs. The cost of the loan from the co-operative system through one of the 4700 local national farm loan associations when once paid is paid for all time, providing the borrower keeps up his installment payments. The initial charges made by the national farm loan associations cannot exceed one per cent of the loan. The federal land banks usually charge a very small application fee; this charge applies in most instances to the cost of examination of the abstract, appraising, etc.

Thus the co-operative federal land banks afford many advantages to farmers who have to borrow using their farms as collateral, and nearly one-half of the farms are mortgaged. The federal land banks at the end of 12 years have outstanding a little more than a billion dollars. The value of this co-operative institution, the largest in the world, has been fully demonstrated and it should continue to serve an increasing number of farmers who are able to qualify for such first farm mortgage loans.

Cherry Trees for Fillers

IT HAS BEEN a very common practice for a number of years to interplant commercial apple orchards with apple fillers, the plan being to remove the filler varieties after the first five or six crops. It is very seldom that other tree fruits have been used to take the place of the filler apple trees, but there is one such case in Indiana that has been notably successful. In this instance Montmorency cherries were used. The site was one which was naturally well drained and the cherry trees grew nicely and produced very satisfactory crops.

During the early fruiting period of the orchard, apple prices were often pretty low, but as there were practically no other well-cared for plantings of cherries in that community, cherries brought excellent prices almost every year. Nearly the entire crop each season was disposed of locally, mostly right at the orchard. Another noteworthy thing was the distribution of labor over a much longer period by having a filler crop which ripened at a different time from the rest of the orchard.

It is very evident that in this case cherries proved to be a much more profitable filler than apples could have been. In fact, when it came time to remove these trees, there was quite a bit of discussion as to whether the cherries or the permanent apple trees should be removed. This goes to show that following the old rule is not always profitable.

The cherry trees in this orchard were frequently sprayed with identical materials and at the same time as the apples. Clean cultivation followed by a rye cover crop was the soil management system followed. It is one which can be recommended for either apples or cherries. In fact, it is hard to find an objection to using cherries for fillers if the site and soil are suited to both fruits and prospective market conditions seem favorable.—*C. L. Burkholder, Purdue University.*

The Market Review

By PAUL FROEHLICH

United States Bureau of Agricultural Economics

FRUIT GROWERS probably run more risk from unfavorable weather than the producers of any other crop. A few cold days during April caused very serious damage to tree fruits and grapes in California. Production of some crops there may be greatly reduced from the original prospects.

April movement of apples showed a rapid decrease. Forwardings of citrus fruit continued much heavier than a year ago, but California output may be affected adversely by the cold spell. Shipments of early strawberries were greatly increased over last spring's record; movement continues active. Prices were generally moderate and tended downward. Even apples were proving somewhat of a disappointment, as the season neared an end. Combined forwardings of 24 fruits and vegetables had decreased temporarily to 2180 cars daily by mid-April.

The General Situation

According to an official report on April 10, "present indications point to a reduced supply of fruit this season. It is, of course, too early for definite estimates, but frost has caused widespread losses in California; the severe winter has damaged fruit buds, especially peaches, in portions of the North Central states; drought conditions have adversely affected both Florida and California, and the recent warm weather has forced many eastern fruit trees into blooming so early that further damage from frost is not unlikely.

"The most promising fruit prospects this season appear to be in the peach sections of the southern states from North Carolina to Texas. On the first of April the condition of peaches in those states averaged 83, or about the same as at this time last year. So these states may have a large peach crop again this season, if conditions continue favorable. California has experienced a succession of frosts, and peaches, pears, plums, prunes, cherries, apricots and almonds all appear to have suffered, and only short or moderate crops of most of these California fruits now seem probable. Even grapes appear to have been hurt to some extent. In the Pacific Northwest, conditions so far appear to be below average, but they seem much more favorable than in California."

Early reports from California, which may be exaggerated, indicate that the damage to peaches in that state possibly is as high as 50 per cent, while cherries may have suffered 50 to 75 per cent damage. Thompson Seedless grapes appear to have been affected more than other varieties. If the early reports are later substantiated, it seems that the April frosts hit California harder than in any previous year.

Early Strawberries Abundant

The strawberry crop in five early states together is forecast at 66,027,000 quarts as against 54,345,000 last season. A bumper crop of 40,000,000 quarts was expected in Louisiana, but unfavorable weather conditions may reduce prospects in that section. Alabama may have 9,000,000, or one-fourth less than in 1928. Texas' production is greatly increased to about 5,000,000 quarts. Florida had 10,000,000, or twice as many as the light 1928 crop in that state. Mississippi is estimated to have only 1,685,000 quarts. Florida shipped more than 1600 cars, compared with 545 last year.

Seven second-early states reduced their acreage 11 per cent below their 1928 total, and prospective reduction of 87,354,000 quarts in this group is nine per cent less than their combined 1928 crop. A good part of the decrease is expected in Tennessee and southern California, but North Carolina and Virginia also will have considerably lighter crops than last spring. Because of expected heavier yields in Arkansas, the crop there may amount to about 24,725,000 quarts, or 3,000,000 more than a year ago. Tennessee expects about 21,300,000, Virginia around 20,600,000, and North Carolina about 14,300,000 quarts.

In addition to Louisiana, the states of Alabama, Texas and Mississippi were active by mid-April. Early sales of Louisiana strawberries in a few cities were made at $6-$6.50 per 24-pint crate, but the jobbing range declined by April 10 to $2.75-$4. On that date the average f.o.b. auction sales in Louisiana was only $1.90 per crate. Alabama berries, in 24-quart crates, were starting in terminal markets at $3-$5.

Berry growers and shippers who have not received a copy of the special mimeographed report, "Strawberries in 1929," issued by the Bureau of Agricultural Economics, Washington, D. C., can get one on request.

Bananas Important

Bananas recently have been receiving more attention than usual because of a tariff levy on this fruit, which has been advocated in some quarters. Both sides to the controversy have presented their arguments. The theory of a duty on bananas is that the higher resulting cost would possibly protect the domestic fruit industry and induce the public to eat more apples and other tree fruits. Those who are opposed to the tariff claim that bananas are in a class by themselves, and that a duty on this fruit will not increase the consumption of domestic products.

Imports of bananas have been steadily increasing and now exceed 60,000,000 bunches annually. Figuring an average of 425 bunches per carload, this is the equivalent of 140,000 cars of bananas, or more than the average annual shipments of apples during the last five years. The estimated value of banana imports during 1928 was $35,400,000.

Apple Markets Rather Weak

It is most unusual to find apples selling lower in April than in February or March at the important shipping points. Best Baldwins had declined to $5 per barrel in western New York, and Extra Fancy, medium to large Winesaps were bringing only $1.75-$2 per box in the Pacific Northwest. The customary demand seems to be lacking, and some lots have not been keeping very well in storage. City market prices, however, have shown very little change. Total apple shipments this season to April 15 had exceeded 123,000 cars, compared with 89,000 a year ago.

The auction market at Liverpool, England, registered considerable strength by the tenth of the month. Best barreled apples from eastern United States were selling as high as $7.80-$9.75, with New York Baldwins ranging $6.30-$7.30. Extra Fancy boxed fruit from the Northwest was bringing $2.60-$3.25 in Liverpool. Exporters of fancy, eastern apples were faring better than expected toward the end of the season in British markets. Export sales have been a most important factor in disposing of the heavy northwestern crop this season.

Certain growers in Shenandoah county, Virginia, were much pleased with returns on some of their spring export shipments. One shipment of 1000 barrels of Mammoth Black Twig variety sold at Rotterdam for $8.40 per barrel. Another consignment of 350 barrels of Winesaps brought $8.18 at Hamburg.

Apple Industry Studied

An important economic organization, making a nation-wide study of agricultural products on the basis of commodities, recently issued the following statement regarding apples in the United States:

"During the crop years 1924 to 1927 the annual production of apples in the United States averaged 178,600,000 bushels, of which 94,800,000 bushels, or about 53 per cent, entered commercial channels as fresh fruit. Of this production, the exports averaged 12,835,000 bushels annually, of which approximately 54 per cent were transported in barrels and 46 per cent in boxes. In addition, in terms of fresh apples, annual exports of dried apples and canned apples averaged 2,563,000 and 343,000 bushels, respectively. Apples from the United States were distributed to all parts of the world, those for the year ended on July 1, 1928, reaching 72 different countries. The United Kingdom furnished the largest market for fresh and canned apples exported from this country, while Germany provided the largest market for dried apples. More than 93,000 cars of apples were shipped by rail from the producing areas to markets in the United States during the year ended July 1, 1928. Distribution within the United States was widespread, apples from the Northwest reaching all of the states, while those from the eastern and central sections entered practically all states east of the Rocky Mountains. Rail hauls of 2500 miles and over are common."

April Storage Holdings

Commercial cold storage holdings of apples had decreased by April 1 to 650,000 barrels, 4,901,000 boxes and 1,305,000 bushel baskets. The remaining supplies

(*To Next Page*)

When a farmer is busy ....he's BUSY!

DURING the months when farm work is at its height every minute counts. Every hour saved is money earned.

You cover more ground with Ethyl. It brings out of your equipment the latent, extra power impossible to obtain with ordinary gasoline. That is one reason why Ethyl saves money for you.

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Ethyl Gasoline is good gasoline *plus* Ethyl fluid, which was developed by automotive science to make gasoline a better automobile fuel. Outstanding oil companies adopted it only after they had proved for themselves *that it did make their gasoline better.*

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GOOD GASOLINE plus ETHYL FLUID equals ETHYL GASOLINE

"Knocks out that knock"

ETHYL GASOLINE

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The FRUIT FARM MARKET

ADVERTISING RATES, 15 CENTS A WORD

Write advertisement on separate sheet. Please enclose cash with order. For advertisements addressed in care of this publicaiton, allow 5 words for address.

SPECIAL NOTICE

All advertising copy, discontinuance orders or change of copy must reach this office by the 10th of this month for next issue.

AMERICAN FRUIT GROWER MAGAZINE
53 West Jackson Boulevard, Chicago

AGENTS—SALESMEN WANTED

BIG PAY EVERY DAY TAKING ORDERS FOR dress shirts, work shirts, pants, overalls, sweaters, underwear, hosiery, pajamas, playsuits. Experience unnecessary. Outfit free. Nimrod Co., Dept. 102, 4922 28 Lincoln Ave., Chicago.

$12.00 DAILY SHOWING NEW LINEN-LIKE tablecloth. Washes like oilcloth. No laundering. Sample free. Bestever, 666 Irving Park Station, Chicago.

NO DULL TIMES SELLING FOOD! PEOPLE must eat. Federal distributors make big money; $3000 yearly and up. No capital or experience needed; guaranteed sales; unsold goods may be returned. We furnish you with sample case, license and free samples for customers—sure repeat orders. Exclusive territory. Ask now! Federal Pure Food Co., W-2307 Archer, Chicago.

WANTED—MAN WHO KNOWS FARM LIFE to travel in country. Steady work, good profits. McConnon & Company, Room 4305, Winona, Minn.

$50.00 WEEKLY. MEN WANTED TO DEMONstrate and take ten orders daily direct from motorists. Amazing magnetic trouble light. Sticks anywhere! More orders, bigger pay. Write for demonstrator and particulars. Magno, Beacon Bldg., Dept. 145, Boston, Mass.

Statement of the Ownership, Management,, Circulation, Etc., Required by the Act of Congress of Aug. 24, 1912,

of American Fruit Grower Magazine, published monthly at Chicago, Ill., for April 1, 1929.

State of Illinois, County of Cook, ss.—Before me, a notary public in and for the state and county aforesaid, personally appeared Harry W. Walker, who, having been duly sworn according to law, deposes and says that he is the business manager of the American Fruit Grower Magazine and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor and business manager are:

Publisher—Magazines, Inc., 53 W. Jackson Blvd., Chicago, Ill.

Editor—Harry W. Walker, 53 W. Jackson Blvd., Chicago, Ill.

Managing Editor—Chester G. Campbell, 53 W. Jackson Blvd., Chicago, Ill.

Business Manager—Harry W. Walker, 53 W. Jackson Blvd., Chicago, Ill.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company or other unincorporated concern, its name and address, as well as those of each individual member, must be given)—C. A. Tupper, H. M. Sisley, H. W. Walker, J. E. Montgomery (all at 53 W. Jackson Blvd., Chicago, Ill.); Chas. W. Price, Suite 601, 250 Park Ave., New York City; E. G. K. Meister, Engineers' National Bank Bldg., Cleveland, Ohio.

3. That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities are: (If there are none, so state.) —None.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holders appear upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

HARRY W. WALKER.
Business Manager.

Sworn to and subscribed before me this 26th day of March, 1929.

(Seal) A. C. BAMBERGER.
Notary Public.
(My commission expires Aug. 11, 1929.)

BEES

LEARN FROM WILL GROVER, BRISTOL, VERmont, to find wild bees.

FARMS AND ORCHARDS

ORCHARD, SHEEP, DAIRY FARM FOR SALE. 160 acres, rich valley loam, clam subsoil, 80 cultivated acres, 20 virgin soil. Balance pasture, timber. Protected orchard, good air drainage. Solid block 340 McIntosh. Modern first-class buildings. Stucco bungalow, open fireplace. Wonderful view. 10,000 feet sawed lumber. Write for details. Mrs. Ben Davis, Galesville, Wis.

BARGAIN FOR CASH. HIGHLY-IMPROVED, producing, 40-acre apple orchard and vineyard, just out of Springdale. Fine house, water and sewer system, electricity, furnace. Apply owner, E. P. R. Duval, Springdale, Ark.

ORCHARD—3000 APPLE TREES, 160 ACRES, good buildings. Box 553, Windber, Pa.

FOR SALE—DELICIOUS APPLE FRUIT FARM. 35 acres, near town. Excellent road. Real home. Peary, Akron, Ind.

FARMS WANTED

WANT TO HEAR FROM OWNER HAVING farm for sale; give particulars and lowest price. John J. Black, Box 68, Chippewa Falls, Wis.

FUR RABBITS

MAKE BIG MONEY WITH CHINCHILLA Rabbits. Real Money Makers. Write for facts. 846 Conrad's Ranch, Denver, Colorado.

HELP WANTED

WANTED—FOREMAN FOR SMALL FRUIT AND truck farm with greenhouse, adjoining fine town in McLean Co. Address P. O. Box 366, Bloomington, Illinois.

NURSERY STOCK

APPLE AND PEACH TREES, 5C AND UP; grape vines, 3c; best varieties. Catalog free of fruits, berries and ornamentals. Benton County Nursery, Box 500, Rogers, Ark.

PEACH TREES 4C, APPLE 6C IN HUNDRED lots. Cherry, pear, plum, shrubs. Catalog free. Leo H. Graves, Farina, Ill.

PERFUME

WERNER'S NARCISSUS, A PERFUME OF REfinement; ⅝ ounce mailed anywhere in U. S., 50 cents. Werner Extract Company, Mechanicville, N. Y.

PLANTS

BERMUDA ONION PLANTS—GROW BIGGER and better onions. Postpaid: 200, 60c; 500, $1.00; 1000, $1.75. Transplanted cabbage: 50, 50c; 1000, $7.50. Port Mellinger, North Lima, Ohio.

SEEDS

FIELD AND GARDEN SEEDS, ONION PLANTS, oil emulsion for dormant spray. McCarty Seed Company.

ASPARAGUS SEED (WASHINGTON RUSTproof), $1.50 lb., 10 lbs. or more, $1.25. Harold Black, Adrian, Mich.

SPRAYING EQUIPMENT

FOR SALE—TWO NEW No. 120 MYERS POWER spray rigs, complete with LeRoi engines, porcelain lined cylinders. Never been uncrated. One No. 95 Myers power sprayer. The Chas. M. Ingersoll Co., Rocky River, Ohio.

TOBACCO

LEAF TOBACCO—GOOD SWEET CHEWING, 3 lbs., 90c; 5, $1.25; 10, $2.00. Smoking, 3 lbs., 60c; 5, 90c; 10, $1.50. United Farmers, Mayfield, Kentucky.

The Market Review

(From Preceding Page)

of barrel and basket fruit were held mostly in states along the Atlantic seaboard and in the North Central area. About 60 per cent of the boxed apples in cold storage were still in Pacific Coast states. The supply of apples in barrels was 30 per cent greater than a year ago, but 45 per cent below the five-year average for April 1. Boxes were reduced to about the normal number for this time of the season. Baskets showed a 45 per cent increase over last spring's figure and were 97 per cent greater than average. Total holdings of apples under refrigeration were 11 per cent heavier than in 1928 but 10 per cent less than average.

Florida Citrus Trees

Press reports indicate that, at the last state enumeration in July, 1928, "Florida had 10,846,932 orange trees in actual bearing condition, not to mention several million young trees not yet old enough to bear fruit. There were 5,189,679 grapefruit trees, and the tangerine trees numbered 1,149,490. In northwest Florida they are producing a hardy kind of Japanese orange—the Satsuma—and 235,503 Satsuma trees were bearing, with a much larger number lately planted in the firm belief that climatic conditions will justify a wide extension of groves of this type. Lemon culture is almost negligible, only 52,992 trees being counted. In California, on the other hand, there is a large and successful lemon industry." Looking to the future, Florida is said to have the advantage of a much larger area of land adapted to citrus fruit culture than any other part of the United States. It is reported that 300,000 acres include all of the Florida groves of citrus fruit, of which 60 per cent may be assigned to oranges, 35 per cent to grapefruit, and five per cent to tangerines.

British Citrus Markets

Imports of grapefruit into the United Kingdom have been increasing and, during 1928, were equivalent to 751,000 boxes, compared with 606,000 the year before. Some shipments arrive from the British West Indies and British South Africa, but nearly 80 per cent of the total imports originate in the United States. Shipments from this country to the United Kingdom in 1928 were 90,000 boxes greater or 18 per cent heavier than the movement during 1927. American grapefruit is now available on the British market during nearly every month of the year. The hotel trade is the most important factor in the British demand for this fruit, and there is a decided preference for the smaller sizes. In 1920, only 12,820 boxes of United States grapefruit were imported by the United Kingdom, compared with the high total of 592,000 boxes last year. During early April, Florida grapefruit ranged $4.25-$5.25 per box on the Liverpool auction, while California arrivals sold the same day at $3.65-$4. Best California oranges were bringing $3.75-$4.85. The United States shipped only 170,000 boxes of oranges to the United Kingdom in 1928.

Dealer Service Popular

A leading exchange of citrus growers in California has been devoting much attention to teaching the trade how to sell medium and small-sized oranges and grapefruit. Personal calls have proved most effective. By the end of February this season nearly 47,000 retailers had been called upon personally by dealer service men. Displays were placed in 28,000 of these stores. Three lines of material were also distributed by mail to 86,000 retail dealers. The first outlined the prospects for Christmas navel orange business; the second urged featuring lemons as a remedy for flu, and the third dealt with merchandising small oranges. Grapefruit advertising also brought good results.

Growers Advised to Pick Up Peach "Drops"

AS PEACH DROPS are heavily infested with curculio "worms," growers are strongly urged to pick up these drops. A heavy second brood of "worms" may ruin the fruit as it ripens if the infested drops are not destroyed.

Experiments conducted by the United States Peach Insect Laboratory at Fort Valley, Ga., show that three collections of dropped peaches will eliminate about 90 per cent of all curculio "worms" that fall during the season in drops. A special effort should be made to collect all the smaller drops, as these are the ones most likely to contain curculio "worms." All drops should be destroyed as soon as collected, by burying in a trench at least 18 to 24 inches below the surface of the soil. A layer of quicklime should be placed over them before filling in with soil.

Pruning Small Fruits

SMALL FRUITS respond to pruning better than any other class of fruits, according to A. L. Ford of the South Dakota State College Extension Service. Proper pruning, he believes, will give materially higher yields.

Raspberries should be pruned by removing at the base all canes that bore the previous season. New canes that are too long should be headed in without damage. Canes that are to bear should be thinned out where they are too thick, leaving eight or 10 canes per plant. All prunings should be burned immediately.

In the case of gooseberries and currants, where the two and three-year-old wood bears the best fruit, wood more than three years old should not be allowed to remain on the bush. About one-third of the wood should be removed, according to Prof. Ford, taking out only the oldest wood. The young suckers that come up from the center should not be removed as they will be bearing fruit when two and three years old.

Index to Advertisements

The concerns whose advertisements appear listed below are equipped to give prompt and satisfactory service to the American fruit grower. Most of them issue literature that is freely at the disposal of our subscribers. It is to the advantage of all that when writing to an advertiser you use the address exactly as it appears in the advertisement, and that you state in your letter: "I read Your Advertisement in AMERICAN FRUIT GROWER MAGAZINE."

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The tractor harrow proves a profitable vineyard tool.

Over 2,500,000 Tons of Grapes

(*From Page Five*)

number of varieties entirely his own. Out of over 75,000 grape seedlings, not over 100 were considered worthy of recommendation for general trial by planters.

In 1876 Prof. Munson started his experiments at his nurseries near Dennison, Texas, but it was not until 1885 that he introduced the first four varieties of his grape originations—the Brilliant, Rommel, Carman and Jaeger. Up to 1911, some 200 other varieties were named and introduced, the most important being Albania, America, Amethyst, Bailey, Bell, Beacon, Blondin, Captivator, Champanel, Delago, Fern Munson, Gold Coin, Headlight, Hernito, Hidalgo, Hopkins, Lukfata, Krause, Laussel, Marguerite, Muench, Mericadel, Neva Munson, Onderdonk, R. W. Munson, Ellen Scott, Wapunka, Wine King, and Xlnta.

Grape picking in the East.

Future Creations

Luther Burbank, the California plant wizard, at one time had hundreds of grape seedlings in his experimental garden at Santa Rosa. Seeds had been sent to him from Armenia and other points in Asia Minor from which he hoped to get one or two worth while varieties. But after they had fruited and he had culled and selected, he discarded the whole lot when he was satisfied that none of the seedlings presented any special improvement over table grape varieties already grown in California.

Lovers of the vine have transplanted grapes from every land to the various grape districts in California but they have produced no original creations. Instead of trying to originate new types, there seems to be a tendency to cut down the offerings largely to the following staple varieties:

Table grapes: Thompson Seedless, Malaga, Muscat, Tokay, Cornichon and Emperor.

Juice grapes: Alicante Bouschet, Zinfandel, Carignane, Mataro, Petite Sirah, Grenache and Mission.

Raisin grapes: Muscat of Alexandria, Sultanina (Thompson Seedless) and Sultana.

During the past four years, there has also been extensive plantings in California of the large luscious black Ribier, which, when first introduced in the eastern markets, brought 25 cents a pound and more. As long as the supply was limited, the prices held up, but last year, after the first few cars, the Ribier brought only fair prices.

Experience has taught the industry that it takes time, patience and money to induce growers to plant new creations, and a still greater outlay and effort to interest the general public in new types of fruit.

Dividends from the Young Orchard

(*From Page Seven*)

tatoes, properly handled, should be more satisfactory as an intercrop than early or late Irish potatoes. The crop takes from the soil its greatest amount of food and moisture when the trees are slowing down in their growth. The crop also continues to grow vigorously and cover the ground, thus taking the place of a cover crop during the latter part of July and the month of August. Even during September and into October the crop may continue to grow and help to harden off the trees for winter.

Early Irish Potatoes.—Like early cabbage, Irish potatoes may be grown as a satisfactory intercrop, demanding thorough cultivation and early fertilization, which should be entirely satisfactory to the trees. Cultivation is discontinued early, and if the crop is harvested early, say during July, late tree growth should not be induced. If, for any reason, the potatoes are not harvested in early July, preferably, but during August, or still worse in early September, then such harvesting may cause the trees to make an extra spurt in growth and consequently subject them to serious injury by low temperatures during the winter.

Truck Crops.—Many truck crops such as squashes, melons, pumpkins, lettuce, beets, carrots, garden peas and others, may be used as intercrops in the orchard. If properly handled, as suggested for the other crops, no serious injury should occur to the trees, and in many cases the trees may be actually benefited. Moreover, trees may fail to receive cultivation or fertilization, where garden and truck crops are not grown. The producer knows that the intercrop must be given attention for profit, while the trees may live and struggle along under neglect.

Brief accounts of the oriental fruit moth, the bud moth and the fruit tree leaf roller, together with control measures for each insect, are contained in publications issued by the New York Agricultural Experiment Station, Geneva. Copies of the publications may be obtained without charge upon application to the station.

A GOOD SET *OR* A POOR ONE?

...the difference is often in power and traction

How much more top grade fruit could you get by having a "Caterpillar" to pull your spraying outfit just at the proper time? Through mud...over steep hills... fighting pests with dust or spray ...just a few days at these critical times often mean the difference between a poor set and a good one...a first grade crop and a second grade one.

"Caterpillar" balanced power and traction give you sure, economical control of the difficult situations that arise in your orchard...as well as the most modern and profitable methods in your every-day work.

Plow under a heavy crop of weeds or nitrogenous cover crop...clean as a whistle! Hitch onto a deep penetrating double disk or a wide width of shallow cultivator...and depend on your "Caterpillar" to do the job for you *better, quicker* and *cheaper.*

There's a "Caterpillar" size for every orchard need...and a hundred orchard needs for every size. Your local "Caterpillar" dealer will be happy to show you how this modern farm power unit is assuring a good crop at a good profit to orchardists all over the world.

A 2-Ton "Caterpillar" operating a spraying outfit through the "power take-off"

Caterpillar Tractor Co.
EXECUTIVE OFFICES: SAN LEANDRO, CALIFORNIA
Sales Offices: Peoria, Illinois • 50 Church St., New York • San Leandro, Calif.
Holt Combined Harvesters • Russell Road Machinery
"Caterpillar" Tractors

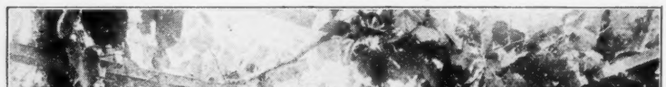
CATERPILLAR
REG. U.S. PAT. OFF.
TRACTOR

Write for our interesting illustrated folder — *The "Caterpillar" in the Orchard.*

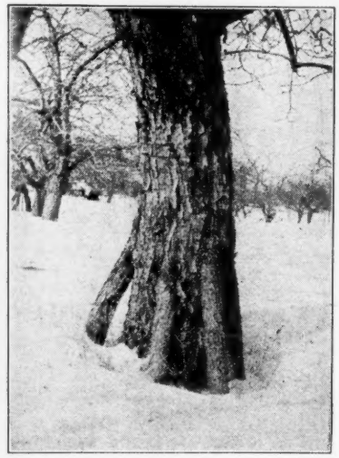
WHAT THE CAMERA SEES

AMERICAN FRUIT GROWER MAGAZINE will pay Five Dollars for the photo selected each month as the PRIZE PHOTO, and will pay One Dollar each for other photos not receiving the prize money but which we are able to use. Send your photo, illustrating anything of interest to the fruit grower, with a short item telling the FACTS about the picture. Address photos to the Editor. If not suitable for our use, your photo will be returned.

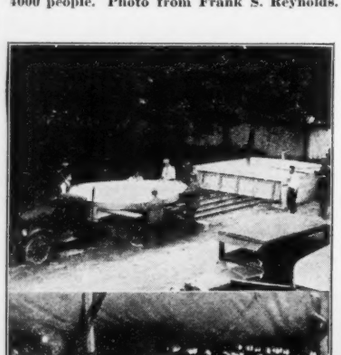
A strawberry shortcake was made at Chehalis, Wash., which measured 30 feet in length, 16 feet in height and weighed a ton. It required 2000 eggs, 300 pounds of flour, 700 pounds of sugar, 50 gallons of cream, 700 quarts of strawberries. It was served to 4000 people. Photo from Frank S. Reynolds.



There is room for a good sized community to sit down 'neath the shade of this "Mother" grape vine (Mission variety), at San Gabriel, Calif. It was planted by Spanish missionaries in 1775, and now, at the age of 154, is going strong, covering 12,000 square feet. One branch is 150 feet long, according to H. F. Stoll. (Prize Photo).

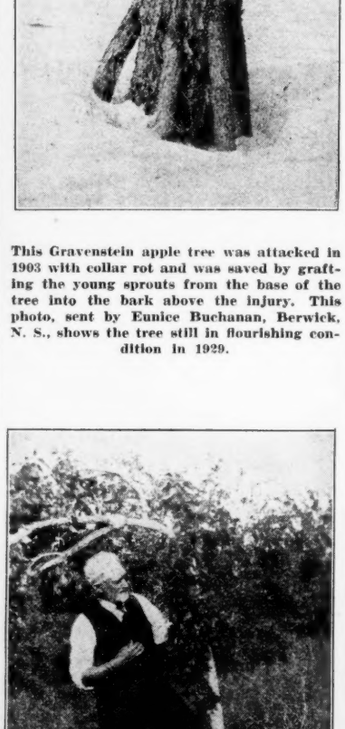


This Gravenstein apple tree was attacked in 1903 with collar rot and was saved by grafting the young sprouts from the base of the tree into the bark above the injury. This photo, sent by Eunice Buchanan, Berwick, N. S., shows the tree still in flourishing condition in 1929.



But Charles S. Howard says the "World's Largest Apple Pie" was made in Albion, N. Y., and sends pictures in proof. This monster pie, served to 4000 people at the Orleans County Fair, was 12 feet across, 8 inches deep and weighed 2½ tons. Two tractors were required to pull the pie into and out of the oven.

A thrifty three-year-old Elberta peach orchard of Bert Wright in Lawrence county, Indiana. The four-year-old peach is Miss Ina Wright. Indiana is justly proud of the quality of its peaches and the number of them.



A hawthorn top-grafted to Bartlett pear by Henry Watts, Annapolis Valley, N. S. The "hawthorn-pear" tree grew erect until 1928 when the weight of the crop bent the hawthorn trunk to the position shown in the photo. Photo sent by Mrs. Amy James, Nova Scotia.

In Imperial Valley, Calif., the tractor is used to haul grapefruit from the field to the packing houses.

Blossom time in a New England apple orchard. A 50-acre block of Fameuse owned by Edwin Seymour, Franklin, Vt. This orchard is 45 years old and has long been a profitable producer.